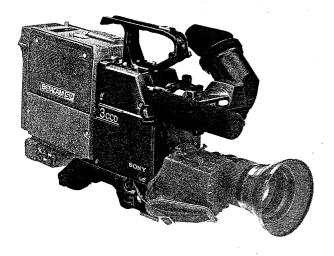
SONY

COLOR VIDEO CAMERA

BVP-70P BVP-70ISP



BETACAM...

MAINTENANCE MANUAL

3rd Edition (Revised 4)

Serial No. 40386 and Higher (BVP-70P)

Serial No. 41001 and Higher (BVP-70ISP)

EBU N-10 LEVEL

SAFETY RELATED COMPONENT WARNING

Components identified by shading and \bigwedge marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

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SONY

For the Customer of the BVP-70ISP Color Video Camera

This maintenance manual is for both the BVP-70P and BVP-70ISP color video cameras. All explanations in this operation manual apply to both cameras though refer only to the camera as "BVP-70P". Note also that the BVP-70P and BVP-70ISP share the same features except for the following sensitivity feature.

High sensitivity of BVP-70ISP

The BVP-70ISP provides a sensitivity two times greater than the BVP-70P. Therefore, you can get a clear video image even in places where Illumination is low.

Sensitivity: 89.9% reflection chart, 2,000 lux (F8) Minimum Illumination: 7.5 lux (at F1.4, \pm 18 dB gain)

. .

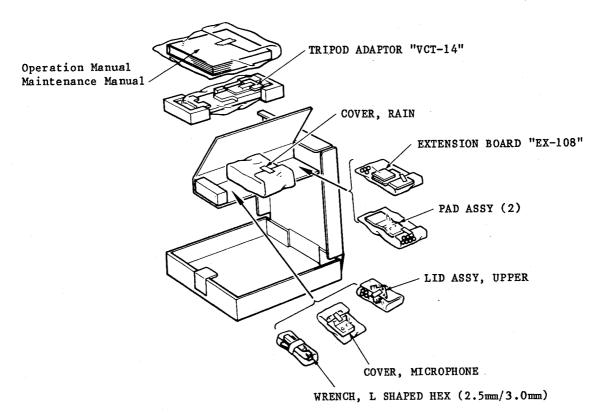
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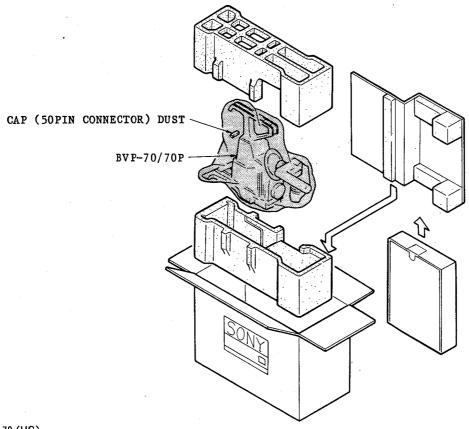
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SECTION 1 **INSTALLATION**

1-1. UNPACKING AND REPACKING

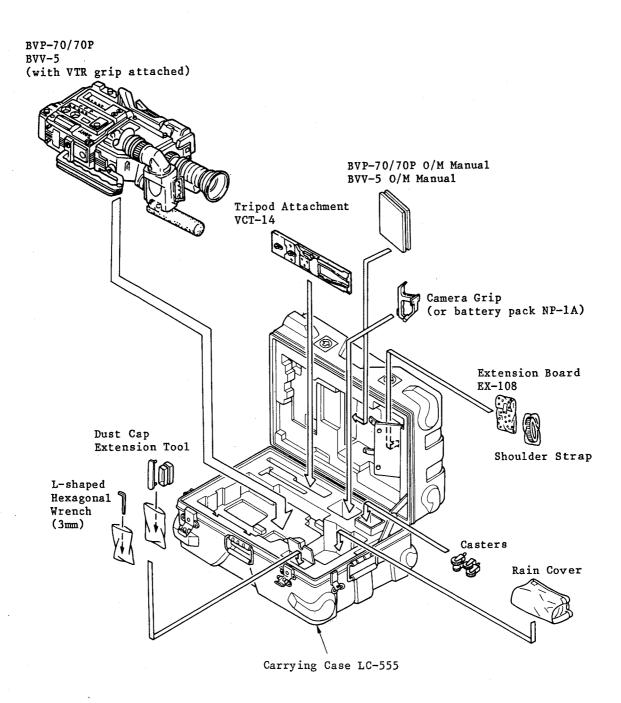




BVP-70 (UC) BVP-70P (EK)

1-2. REPACKING IN CARRYING CASE

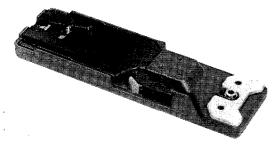
The camera and VTR can be stored in the carrying case with the lens and viewfinder attached. This will protect the camera from the damage caused by outside pressure.



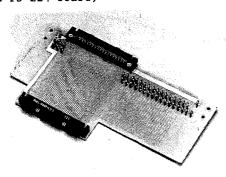
1-3. SUPPLIED ACCESSORIES

. Tripod attachment "VCT-14": x 1

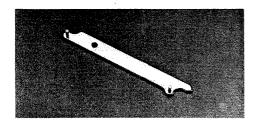
This is the fixed mount for the attached camera at the tripod.



. Extension Board "EX-108": x 1
Use this for the check and repair of the
main printed boards. (IE-25/25P board, VA-85
board, PR-138A/138B board, EN-69/69P board,
and PS-224 board)



. Extension tool: x 1
Use this when pulling out the printed board
in the card rack.



. Dust Cap, 50-pin connector: x 1



BVP-70 (UC) BVP-70P (EK)

- . Dust cover : x 1
- . L-shaped Hexagonal wrench (3mm): x 1 (2mm): x 1

 Used for fixing or removing screws of the handle assy.



. LID ASSY, Upper : x 1



- . Screw, Blind : x 2 After removing the handle assy of the camera, used for closing the hole on the upper cover.
- . Cover, Microphone: x 1

 When the supplied microphone is detached from the viewfinder, attach this to protect the viewfinder from rain.



. Cover, BNC: x 1



- . Operation Manual : x 1
 Instruction manual for BVP-70/70P.
- . Maintenance Manual : x 1
 Service Manual for BVP-70/70P.

1-4. CONNECTORS/CABLE

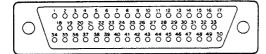
1-4-1. Connector Input/Output signals

The main connector input/output signals are as follows;

VS signal lVp-p TEST OUT

 $Zo = 75\Omega$

50-PIN CONNECTOR



(EXT VIEW)

	(EXI VIEW)	·
PIN No	SIGNAL	REMARK FOR SIGNAL
1	GEN LOCK IN (X)	VBS 1 Vp-p, Zi=1 kΩ
2	GEN LOCK IN (G)	VDS 1 VP-P, Z1—1 K 52
3	+8.8 V OUT	REG (+8.8 V)
4	-5.0 V OUT	REG (-5.0 V)
5	UNREG (GND)	GND for UNREG
6	UNREG (GND)	GND for UNKEG
7	R VIDEO OUT (X)	
8	G VIDEO OUT(X)	V 0.7 Vp-p , $\text{Zo}=75 \Omega$
9	B VIDEO OUT (X)	
10	RGB VIDEO OUT (G)	GND for R, G, B VIDEO
11	(Spare)	
12	(Spare)	
13	(Spare)	
14	SD IN/OUT	Serial data for camera control
15	MIC OUT (G)	
16	MIC OUT (X)	$Zo \leq 600 \Omega$, -60 dBm balanced
17	MIC OUT (Y)	
18	RET VIDEO IN (X)	V 0.7 Vp-p, Zi=1 kΩ
19	RET VIDEO IN (G)	V 0.1 VP-P, ZI-1 K &
20	ZEBRA/AUDIO IN	AUDIO Zi≧1 kΩ
21	(Spare)	
22	TAPE IND 2 IN	ON: +4.5 V, OFF; GND or OPEN
23	TAPE IND 1 IN	ON. T4.5 V, OIF, GND OF OPEN

		,	
PIN No.	SIGNAL	REMARK FOR SIGNAL	
24	REC ALARM IN	ON: $+5 \text{ V}$, OFF: $+2.5 \text{ V}$ or 0 V , $\text{Zi} \ge 20 \text{ k} \Omega$	
25	BATT IND IN	Note 1), $Zi = 300 \Omega$	
26	PB REF IN	PB: +4.5 V, CAM: 0 V or OPEN	
27	VTR START/STOP OUT	Note 2), Zo≦10 kΩ	
28	(Spare)		
29	R-Y VIDEO OUT (X)	V 0.7 Vp-p, Zo=75 Ω (BVP-70)	
30	R-Y VIDEO OUT (G)	V 0.525 Vp-p, Zo=75Ω (BVP-70P)	
31	AUDIO CONT OUT	$0 \text{ V } (0 \text{ dB}) \sim 7 \text{ V } (-20 \text{ dB})$	
32	VTR SAVE OUT	SAVE: $+4.5 \text{ V}$, STAND BY: 0 V , $20 \leq 10 \text{ k} \Omega$	
33	AUDIO MONITOR IN	No connection	
34	SYNC (VTR) OUT	5 Vp-p, Negative pulse, Zo≦100Ω	
35	(Spare)		
36	SHUT CLOSE IN	No connection	
37	CF OUT	Color Framing	
38	RET VIDEO ENABLE OUT	ENABLE: 0 V, DISABLE: +5 V or OPEN	
39	UNREG IN	$+10.6 \text{ V} \sim +17 \text{ V}$	
40	UNREG IN	110.0 V - 111 V	
41	Y VIDEO OUT (X)	- VS 1.0 Vp-p, Zo=75 Ω	
42	Y VIDEO OUT (G)	VB 1.0 VP P, 20—1022	
43	VBS OUT (X)	VBS 1.0 Vp-p, Zo=75 Ω	
44	VBS OUT (G)	7DD 110 1P P, 20-10 88	
45	(Spare)		
46	(Spare)		
47	(Spare)		
48	(Spare)		
49	B-Y VIDEO OUT (X)	$V = 0.7 \text{ Vp-p}, \text{ Zo} = 75 \Omega \text{ (BVP-70)}$	
50	B-Y VIDEO OUT (G)	V 0.525 Vp-p, Zo=75Ω (BVP-70P)	

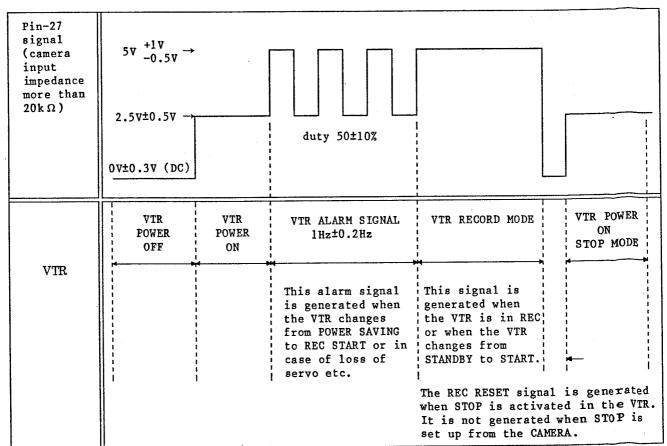
Note. 1 Signal at Pin 25

Battery voltage detection and warning signal generating circuits are located within the VTR. This signals are supplied from the VTR to the camera to either blink or light the LED at the bottom of the viewfinder.

BATTERY TERMINAL ADAPTOR (VTR INTERNAL BATTERY)	DC12V to 11.1V	DC11.1V to 10.8V	PIN 25 TURNS HIGH AT DC 10.8V. 10.6V DC or below the VTR Internal Power is cut off so that the Battery Power is sent to Pin 25.
PIN 25 OUTPUT FROM VTR	0 V	1Hz±0.2Hz duty 50±10%	DC2 to 3V across 300Ω
LED IN VIEWFINDER	NEITHER BLINKS NOR LIGHTS	BLINKS AT 1Hz	LIGHTS

Note. 2 Signal at Pin 27

When the VTR is ON, the input to the camera at pin 27 is 2.5V DC. In VTR record mode the voltage is 5V DC. When servo is not applied or if alarm signals are generated within the VTR, an alternating 1Hz signal (2.5Vp-p with 2.5V DC as reference) is sent to the camera. At the tape end when the VTR enters Stop mode or when setting up the Stop mode from the VTR, OV DC is generated from 10msec to 100msec (called REC RESET). After REC RESET the signal level returns to 2.5V DC.



VF (20P)



(EXT VIEW)

PIN No.	SIGNAL	REMARK FOR SIGNAL
1	FILTER 1 OUT	
2	FILTER 2 OUT	ON: +5 V, OFF: 0 V or OPEN
3	FILTER 3 OUT	ON: +3 V, OFF: U V OF OFEN
4	FILTER 4 OUT	
5	GAIN UP IND, OUT	ON: +5 V, OFF: 0 V or OPEN,
υ	GAIN OF IND. COT	+9 dB: Zo=7 kΩ+18 dB: Zo=1 kΩ
6	CCIR/EIA OUT	CCIR: $+8.8 \text{ V}$, EIA: 0 V , $\text{Zo}=1 \text{ k}\Omega$
7	AUTO IND. OUT	ON: $+5$ V, OFF: 0 V or OPEN, $Zo = 470$ k Ω
8	TAPE IND. 1 OUT	ON: +4.5 V, OFF: 0 V or OPEN, Zo=330 Ω
9	TAPE IND. 2 OUT	ON: +4.5 V, OFF: 0 V OF OFEN, 20—500 \$2
10	MIC IN (G)	GND for MIC
11	ZEBRA/AUDIO IN/OUT	ZEBRA ON: 0 V, OFF: +5 V or OPEN
11	ZEBRA/ AUDIO IN/ OUI	AUDIO: Zo≦30Ω, −15 dBs±1 dB
12	VF VIDEO OUT (X)	VBS 1 Vp-p, Zo≦100Ω
13	AUDIO CONT IN	$0 \text{ V } (0 \text{ dB}) \sim +7 \text{ V } (-20 \text{ dB})$
14	MIC IN (Y)	Zo≤600Ω −60 dBm balanced
15	MIC IN (X)	20 ≥ 000 m = 00 mill parameer
16	BATT IND. OUT	ON: $+4.5 \text{ V}$, OFF: 0 V or OPEN, $20=330 \Omega$
17	REC/TALLY OUT	ON: +8.8 V, OFF: 0 V or OPEN
18	+9.3 V (VF) OUT	REG+9.3 V
19	GND	GND
20	UNREG OUT	$+10.6 \text{ V} \sim 17 \text{ V}$

LENS (12P)



(EXT VIEW)

PIN No.	SIGNAL	REMARK FOR SIGNAL
1	RET VIDEO ENABLE IN	ENABLE: 0 V, DISABLE: +5 V or OPEN
2	VTR START/STOP IN	TRIGGER 5 Vp-p
3	GND	GND for UNREG
4	AUTO +5 V OUT	AUTO: +5 V, MANU: 0 V or OPEN
5	IRIS CONT OUT	$+3.4 \text{ V (F16)} \sim +6.2 \text{ V (F2.8)}$
6	UNREG OUT	$+10.6 \text{ V} \sim +17 \text{ V}$
7	IRIS POSITION IN	$+3.4 \text{ V (F16)} \sim +6.2 \text{ V (F2.8)}$
8	REMOTE/LOCAL OUT	0 V
9	EXTENDER ON/OFF IN	ON: 0 V, OFF: +5 V or OPEN
10	(Spare)	
11	(Spare)	
12	(Spare)	

REMOTE (6P)



(EXT VIEW)

PIN No.	SIGNAL	REMARK FOR SIGNAL
1	(Spare)	
2	SERIAL DATE IN/OUT	Serial data for camera control
3	UNREG (GND)	GND for UNREG
4	(Spare)	
5	(Spare)	
6	UNREG OUT	$+10.6 \text{ V} \sim +17 \text{ V}$

When cables with connectors are set to the respective connectors on the connector panel during installation or service, the specified or equivalent connectors with cables, or the specified cable assemblies should be used, these are listed as follows;

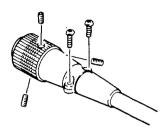
Connector function	Parts No., and name of connector with cable
TEST OUT	1-560-069-11 PLUG, BNC
(BNC)	or UGC-0.5 cable assembly (Cable length 1.5m, optional)
VF (20P, FEMALE)	1-558-609-11 PLUG, 20P, MALE
LENS (12P, FEMALE)	1-562-356-11 PLUG, 12P, MALE
REMOTE	1-557-406-11 REMOTE CONTROL CABLE
(6P, MALE)	(Cable length 10m)
50-PIN CONNECTOR	1-562-083-00 PLUG, 50P, FEMALE
(50P, MALE)	(Contained within CA-3A, CA-50 and BVV-5)

1-4-3. Removal of the CCZ, CCZQ connectors

CCZ, CCZQ Connectors (Removal of the connector)

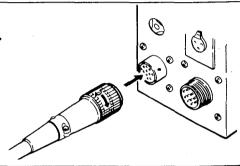
Step 1.

Remove the three hexagonal setscrews and the two setscrews.



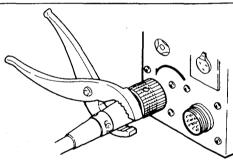
Step 2.

Fix the CCZ connector at the camera or VTR connector.



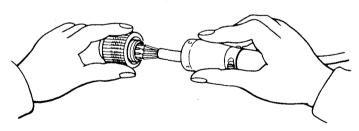
Step 3.

Rotate the CCZ connector counterclockwise by the plier and loosen it.



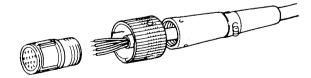
Step 4.

It can be removed by hand and unsolder.

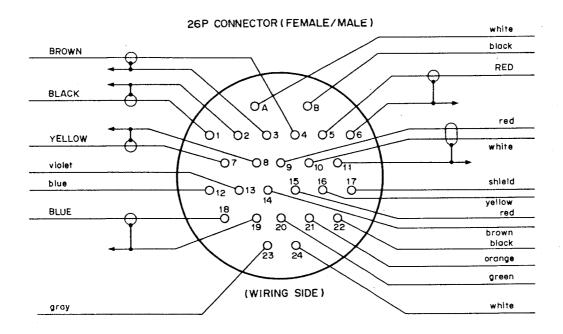


Step 5.

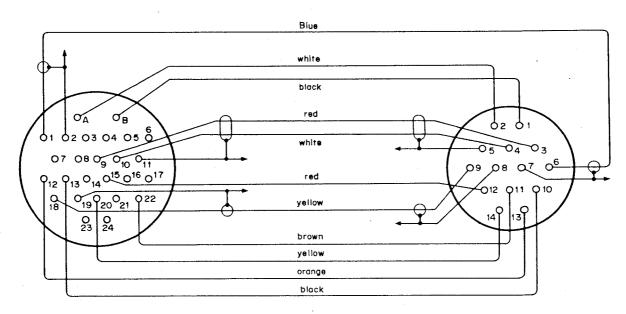
It can be broken up as shown in Figure.



CCZ cable (wiring diagram)



CCZQ cable (wiring diagram)



26P CONNECTOR (FEMALE) (WIRING SIDE)

14P CONNECTOR (MALE) (WIRING SIDE)

1-5. INSTALLATION CONDITIONS

Operating temperature 0°C to +45°C

Storage temperature -20°C to +60°C

Humidity Non condense

- . Avoid rough handling or mechanical shock to the camera.
- Avoid placing subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Clean the viewfinder lens with a lens cleaner available at camera stores.
 Do not use any type of solvent, such as alcohol, benzine or thinner.
- . After using the camera

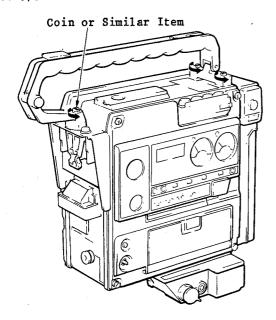
 Turn off the power of a equipment connected
 to the camera.

Step 2. Attach the VTR to the camera.

1-6-1. Set up with the BVV-1/1PS/1A/1APS/5/5PS VTR

(1) When the grip of BVP-70/70P is used; Step 1. Remove the grip and shoulder pad of the VTR.

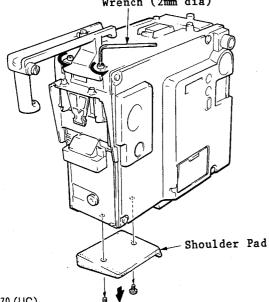
BVV-5/5PS

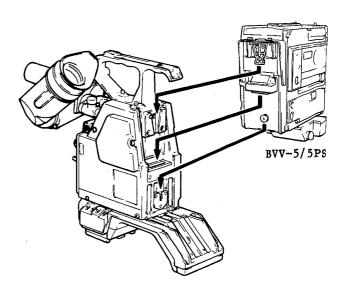


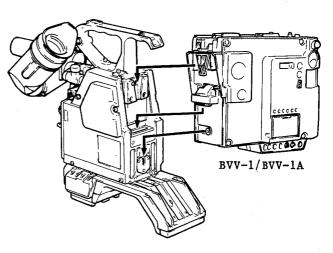
Note; After removing the grip, attach the cover (supplied) to the screw holes of the grip.

BVV-1A/1APS

L-shaped Hexagonal Wrench (2mm dia)





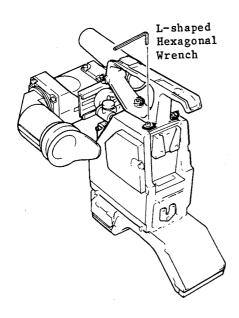


Step 3. Tighten the screws (supplied with the VTR) securely.

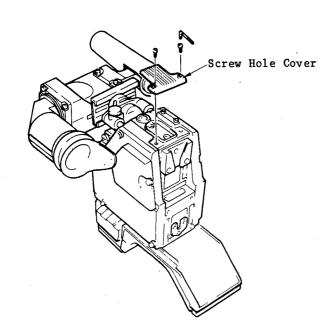
Step 4. Insert the 2 screws (M4) supplied with the VTR into the unoccupied screw holes for the VTR grip.

VTR is used;

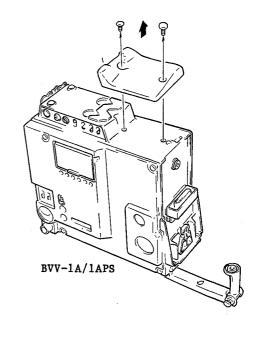
Step 1. Remove the grip of the camera.



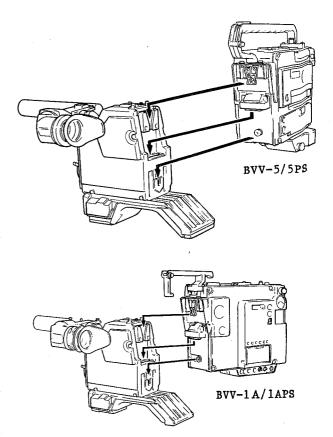
Step 2. Attach the cover (sulpplied) to the screw holes of the grip.



(2) When the grip of BVV-1/1PS/1A/1APS/5/5PS Step 3. Remove the shoulder pad of the VTR



Step 4. Attach the VTR to the camera.



Step 5. Fasten the screws (supplied with the VTR) securely.

BVP-70 (UC) BVP-70 P (EK)

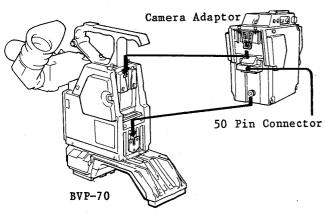
1-6-2. For System Use

Step 1. Attach the tripod attachment (VCT-14) to the tripod.

Fit the screw of the tripod into one of the screw holes on the bottom of the tripod attachment.

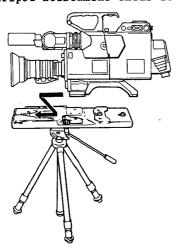


Step 2. Attach the camera adaptor to the camera. Fastenthe 2 screws securely.



Step 3. Attach the camera to the tripod attachment.

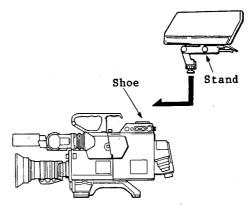
Slide the camera along the groove of the tripod attachment until it clicks.



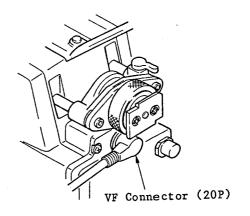
Step 4. Attach the viewfinder (BVF-50) to the shoe on the camera adaptor. (Refer to BVF-50 operation and maintenance manual.)

- (1) Attach the viewfinder stand (supplied with BVF-50) to the viewfinder.
- (2) Attach the viewfinder stand to the shoe on the camera adaptor. Slide the bottom plate of the stand to the shoe on the camera adaptor, and tighten the ring of the stand.

If you can not install the viewfinder because of the grip of camera, remove the grip.



- (3) Remove the 1.5inch viewfinder (supplied with BVP-70/70P).
- (4) Connect the BVF-50 to the VF connector on the camera with the 20P-12P connecting cable (supplied with the BVF-50).



1-7. GAIN CHANGES

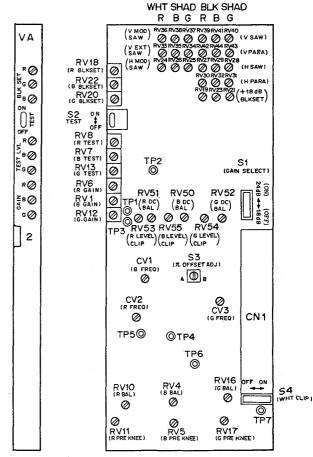
The gains of 0-9-18dB can be selected with the GAIN selector (side panel) at the factory. Therefore the gain can be set as follows.

0 - 9 - 18dB

0 - 9 - 24dB

Changing from 18dB to 24dB

By setting the S1 (GAIN SELECT) switch On the VA-85 board to "24dB", the video output level can be raised by 24dB at the 18-position of GAIN selector (side panel). When 24dB or the S1 switch is changed; 18dB --24dB \rightarrow 18dB, be sure to perform the +18 dB Black Set adjustment.



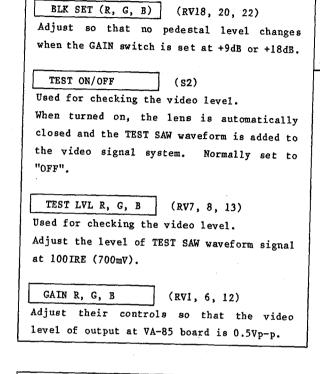
VA-85 BOARD (PANEL SIDE)

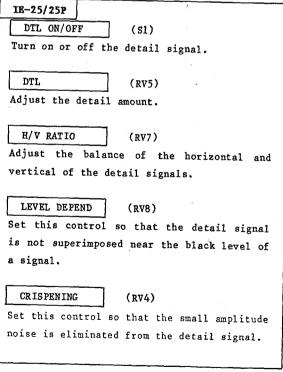
VA-85 BOARD (COMPONENT SIDE)

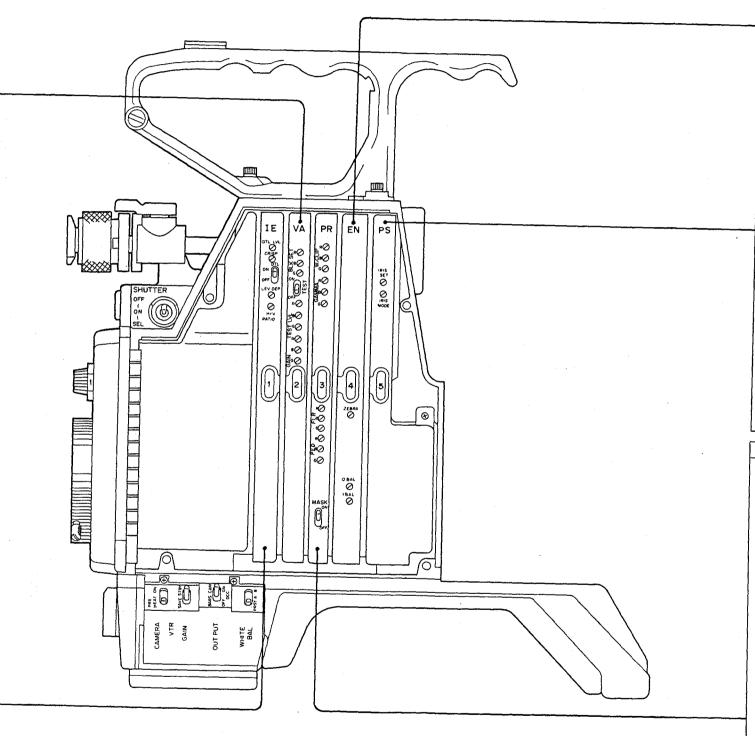
1-8. SWITCH, CONTROL SETTING

1-8-1. Daily Maintenance

VA-85







ZEBRA (RV13)

Adjust RV13 so that the 70IRE (500mV) section is displayed on the viewfinder screen in a zebra pattern.

Q/U BAL (RV21)

I/V BAL (RV19)

Adjust two controls alternatively and observe the output video signal (composite video signal) corresponding to the black portion. The adjustment should be minimized the carrier leakage.

IRIS SET (RV5)
IRIS MODE (RV4)
Adjust the detection me

PR-138A/138B

KN-69/69P

Adjust the detection method of the video level and the sensitivity for the signal when the lens iris is set to "Auto" mode. The peak level detection is selected when the IRIS MODE is at the fully counterclockwise position and the average level detection is selected at its fully clockwise position. Set the IRIS MODE to the mid position, shoot the gray scale chart and adjust the IRIS SET so that the white peak level is 100IRE (700mV).

GAMMA R, G, B (RV3, 8, 12)
When a 11-step grayscale chart is shot so that the white level is 100IRE (700mV), set the cross point of the waveform at 60IRE (420mV).

W. CLIP R, G, B (RV22, 23, 24)
When setting the GAIN switch at +18dB,
adjust the white level.

PED R, G, B (RV2, 33, 10)
Close the lens iris, and set the pedestal level at 3IRE.

FLR R, G, B (RV25, 26, 27)

Compensate the dispersion of the video level due to the flare.

MASK ON/OFF (S1)
Change over the masking signal to ON or OFF.
Normally set to OFF. (PAL: ON)

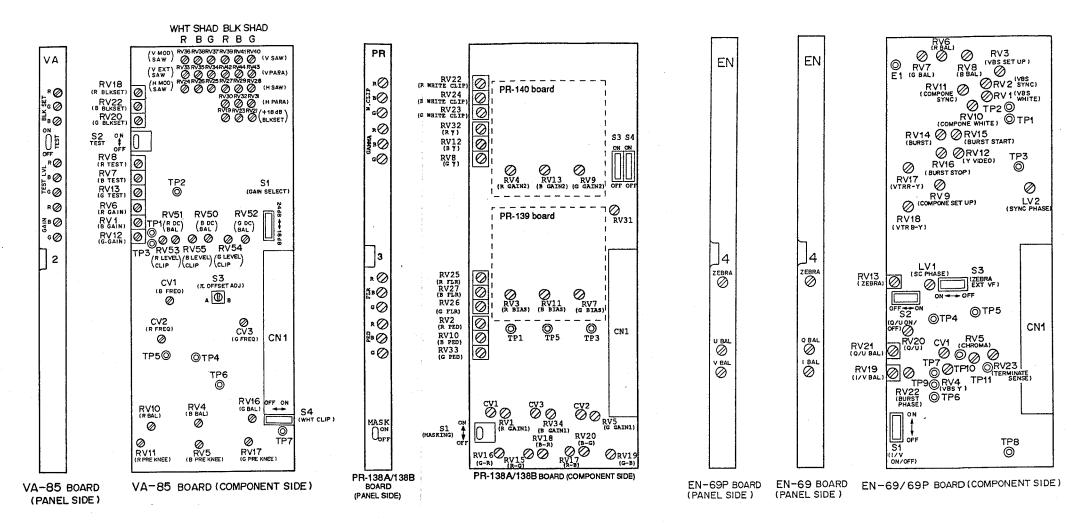
BVP-70 (UC) BVP-70P (EK)

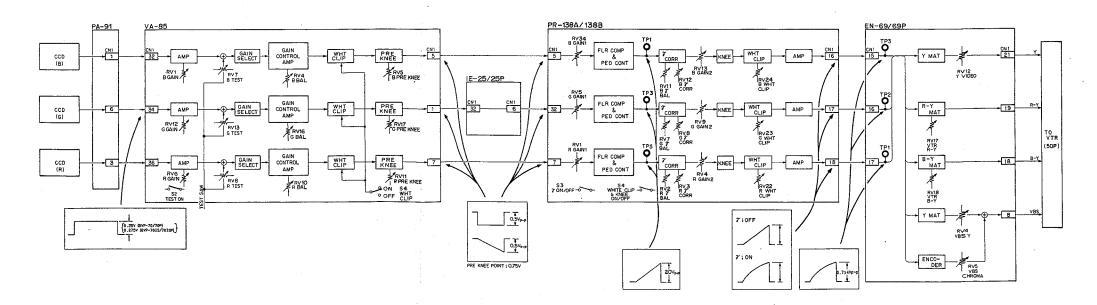
1-17

1-18

LEVEL CHECK SHEET

- 1. Adjust the iris control so that the video level at CN1-34/VA-85 board is 0.25V± 0.03V for BVP-70/70P and 0.275V±0.03V for BVP-70IS/70ISP.
- 2. Adjust the ORV12 (G GAIN)/VA-85 board so that the video level at CN1-32/PR-138A, 138B board is 0.5+0.01Vp-p.
- 3. Adjust the ⊘RV6 (R GAIN)/VA-85 board so that the video level at CN1-7/PR-138A, 138B board is 0.5±0.01Vp-p.
- 4. Adjust the ♠RV1 (B GAIN)/VA-85 board so that the video level at CN1-5/PR-138A, 138B board is 0.5±0.01Vp-p.
- 5. Set the S2 (TEST ON/OFF)/VA-85 to "ON".
- 6. Adjust the ♠RV13 (G TEST)/VA-85 board so that the video level at CN1-32/PR-138A, 138B board is 0.5±0.01Vp-p.
- 7. Adjust the ORV8 (R TEST)/VA-85 board so that the video level at CN1-7/PR-138A, 138B board is 0.5±0.01Vp-p.
- 8. Adjust the RV7 (B TEST)/VA-85 board so that the video level at CN1-5/PR-138A, 138B board is 0.5±0.01Vp-p.
- 9. Adjust the ◆RV7 (G → BIAS)/PR-138A, 138B board for such a position that the white peak level at CNI-17/PR-138A, 138B board does not change while setting S3 (→ ON/OFF)/PR-138A, 138B board at ON or OFF.
- 10. Adjust the ORV2 (R γ BIAS)/PR-138A, 138B board for such a position that the white peak level at CN1-18/PR-138A, 138B board does not change while setting S3 (γ ON/OFF)/PR-138A, 138B board at ON or OFF.
- 11. Adjust the ORV11 (B \gamma BIAS)/PR-138A, 138B board for such a position that the white peak level at CN1-16/PR-138A, 138B board does not change while setting S3 (\gamma ON) OFF) /PR-138A, 138B board at ON or OFF.
- 12. Adjust the ORV9 (G GAIN)/PR-138A, 138B board so that the video level at TP2/EN-69, 69P board is 0.7±0.01Vp-p.
- 13. Adjust the ORV4 (R GAIN)/PR-138A, 138B board so that the video level at TP1/EN-69, 69P board is 0.7±0.01Vp-p.
- 14. Adjust the ORV13 (B GAIN)/PR-138A, 138B board so that the video level at TP3/EN-69, 69P board is 0.7±0.01Vp-p.





BVP-70 (UC) BVP-70P (EK)

1-8-2. Switches Setting on the Board

[VA-85 board]

. S1 (GAIN SELECT)

By setting the GAIN selector (side panel) to "18", the video output level can be raised by 18dB or 24dB with this switch.

In this case, be sure to perform the +18dB Black Set Adjustment for R, G and B video signals respectively.

WHT SHAD BLK SHAD RBGRBG VΑ NV27RV29ŘV2 Ø Ø Ø RV30RV32RV3 Ø Ø Ø RV19 RV19 RV18 (H SAW) .PØ 0 R° ⊗ RV22 (H PARA) Ø 3.⊘ 0 RV8 (R TEST) RV7 (B TEST) Ø 0 S1 (GAIN SELECT RV13 0 RV6 ₽Ø 0 RV52 **RV51** ₹8Ø RV1 0 Ø 0 0 ິ∘⊘ Ø Ø RV54 2 S3 (π offset adj) CV1 (B FREO) д 📵 в 0 CN1 0 TP5⊚ ©TP4 TP6 RV10 RV4 0 Ø 0 0 0 0

VA-85 BOARD (PANEL SIDE)

VA-85 BOARD (COMPONENT SIDE)

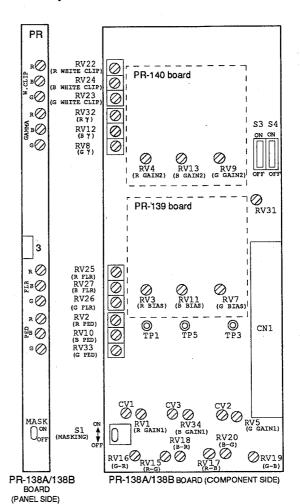
[PR-138A/138B board]

. S3 (γ on/off)

When turned on, the gamma correction is performed so that the overall characteristic of signals between camera and monitor is " $\gamma = 1$ ". Normally set to "ON".

. S4 (WHITE CLIP & KNEE)

When turned off, the white clipping and knee correction are automatically released. Use for the video signal system adjustment. Normally set to "ON".



BVP-70 (UC) BVP-70P (EK)

[EN-69/69P board]

. S1 (1/V) S2 (Q/U)

When turned on, the 1 (Q) signal is added to the encoder circuit. Use for the encoder circuit adjustment. Normally set to "ON".

. S3 (ZEBRA EXT VF)

When viewfinder BVF-50 is used, 70% level portion is displayed in the zebra pattern on the viewfinder screen with this switch set to "ON". Normally set to "OFF".

[PS-224 board]

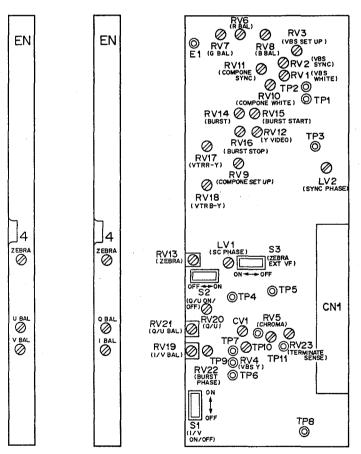
. S1 (FIELD/FRAME)

Selects the ways of CCD picture readout; "FIELD" or "FRAME". It has been set "FIELD" at the factory.

S2 (SPC/GENERAL)

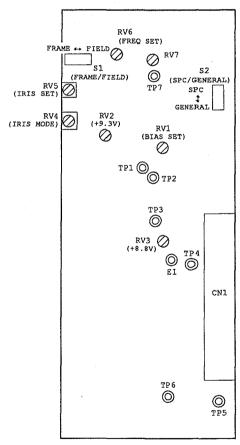
Selects the modes of the REC lamp in the Viewfinder and TALLY lamp.

They operate ordinarily with the S2 switch set to "GENERAL". When set to "SPC", they operate as the W/B lamp besides their ordinary functions.



EN-69P BOARD EN-69 BOARD (PANEL SIDE) (PANEL SIDE)

EN-69/69P BOARD (COMPONENT SIDE)



PS-224 BOARD (COMPONENT SIDE)

[SG-143/143AP board]

- . S1 (H BLKG SELECT)
 - Adjusts the horizontal blanking width. It has been adjusted so as to be 10.9±2uS.
- . S2 (V BLKG SELECT)...NTSC only
 Adjusts the vertical blanking width. It has
 been set to "20H".
- . S4 (COLOR FRAME)

When turned on, the color framing pulse is fed from pin 37 of 50-pin connectors.

. S5 (CABLE COMP)

In the external synchronous mode, turns off the GENLOCK signal from a connection cable under 150m and turns on the signal for one exceeding 150m.

- . S6 (EXT SC PHASE 0°/180°)
- . RV4 (EXT SC PHASE)

Adjusts the SC (subcarrier) phase of the output signal in the external synchronous mode.

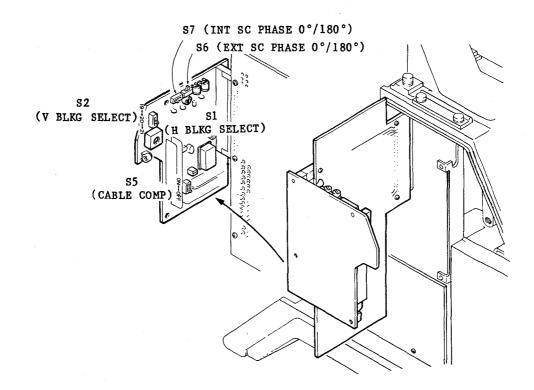
- . S7 (INT SC PHASE 0°/180°)
- . RV5 (INT SC PHASE)

Adjusts the SC (subscatter) phase of the output signal in the internal synchronous mode.

(Be sure not to turn RV5 except when adjustment is out of condition.)

. RV3 (H PHASE)

Adjusts the phase of the camera video signal in the external synchronous mode.



[AT-58]

. S1 (CHECK, FP INH)

CHECK

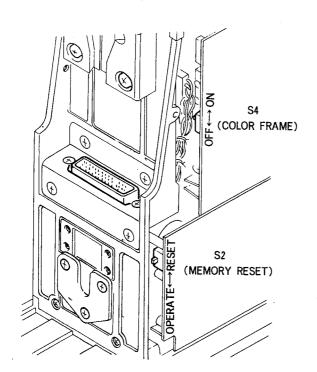
This switch is not used. Normally set to "ON".

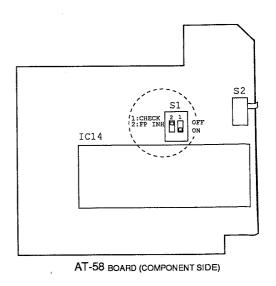
FP INH

When set to "OFF (OPEN)", the values of the white balance adjusted at each filter position can be stored in the memory A and B independently. In short, up to 8 adjusted values; 4 for the memory A and 4 for the memory B can be stored. When set to "ON", only 2 adjusted values; one for A and 4 for B can be stored. In this case, the adjusted values will not correspond to the selection of the color temperature conversion filter. According to the selection of WHITE BAL switch (side panel), the white balance value is stored in the memory A and B or read out.

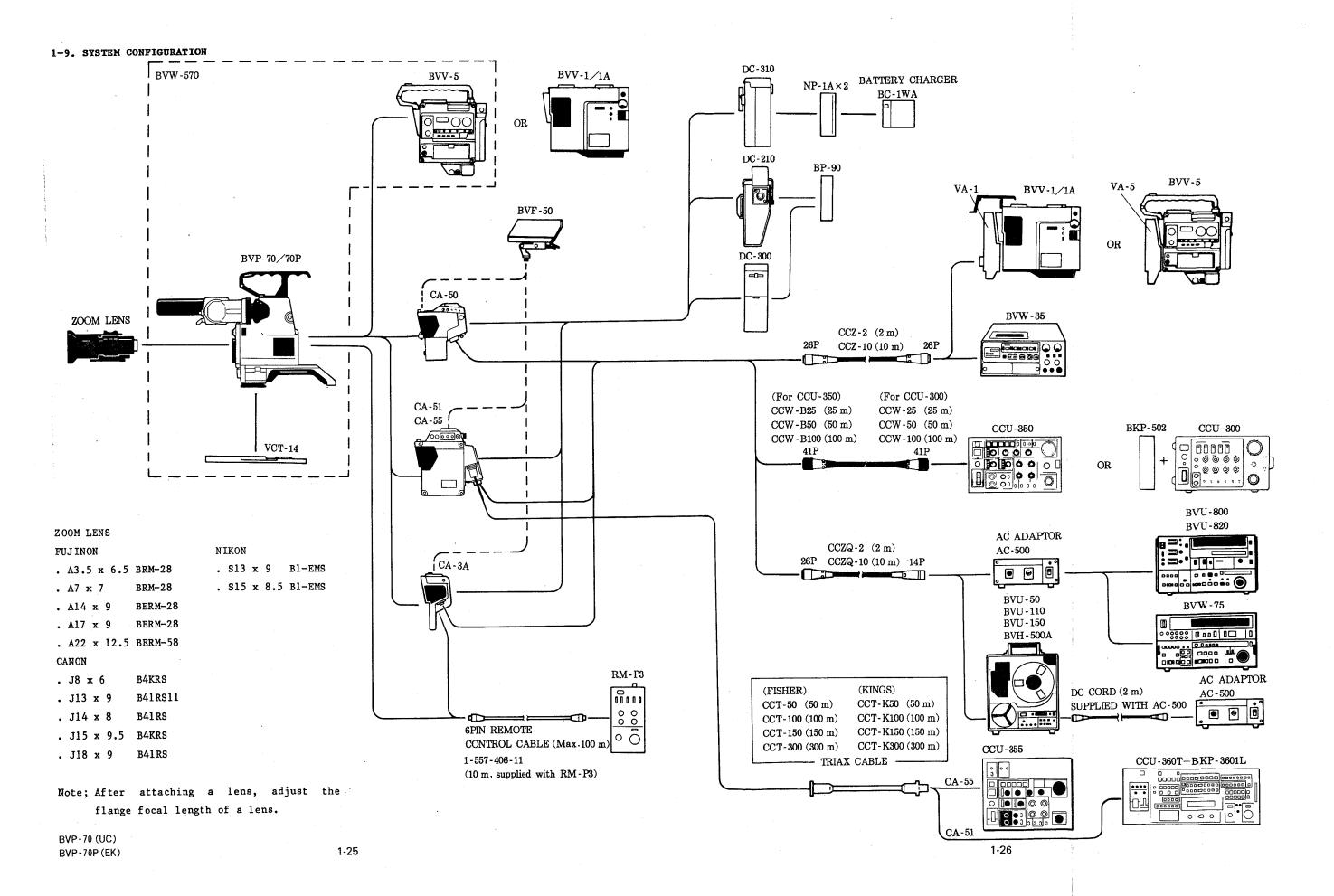
. S2 (MEMORY RESET)

By setting the CAMERA/VTR switch (side panel) to "OFF" and this switch to "MS ET", the compensation data stored in the 11 crocomputer can be reset. Normally set to "OPERATE".





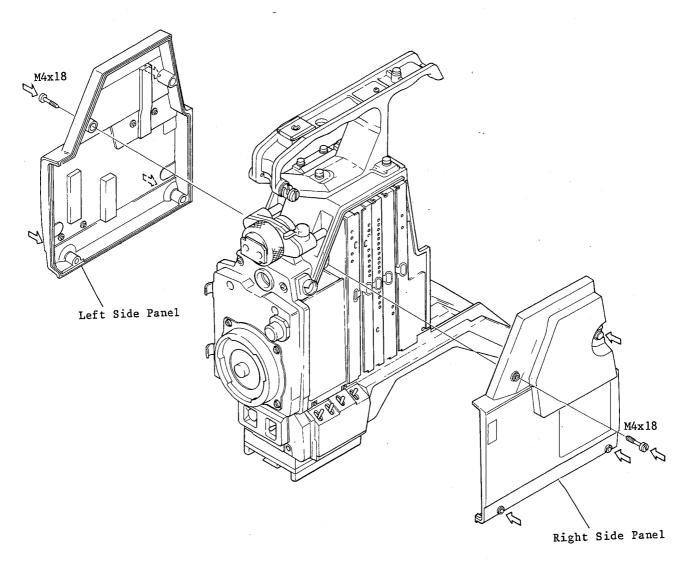
BVP- 70 (UC) BVP- 70P (EK)



SECTION 2 REPLACEMENT OF MAIN PARTS

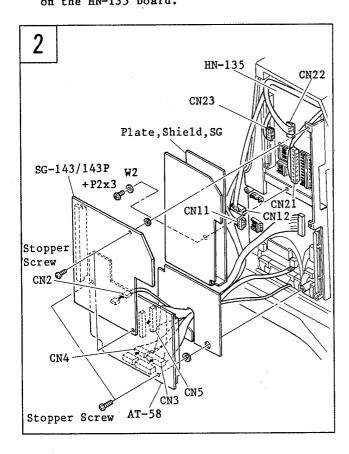
2-1. CABINET REMOVAL

To remove the left or right side panel, unscrew the four screws (M4x18) respectively.

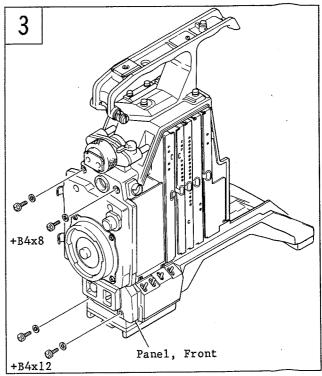


2-2. REPLACEMENT OF CCD UNIT

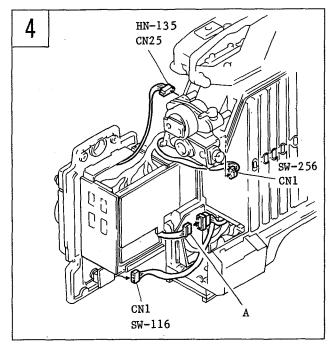
- 1. Remove the left and right side panels, referring to Section 2-1 "CABINET REMOVAL".
- 2. Remove the four stopper screws and remove the SG-143/143AP board and AT-58 board. Disconnect the four connectors, CN2, CN3, CN4, and CN5 on the AT-58 board. Remove the one screw (+P2x3) and remove the SG SHIELD PLATE. Disconnect the five connectors, CN11, CN12, CN21, CN22 and CN23 on the HN-135 board.



3. Remove the four screws (+B4x8, + β 4x12) securing the front panel to the camera.



4. Disconnect the three connectors, CN25 on the HN-135 board, CN1 on the SW-116 board and CN1 on the SW-256 board. Disconnect the connector A shown in the figure.

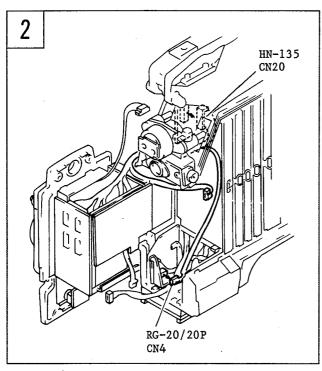


5. When a new CCD unit is installed, reverse the procedures for removal.

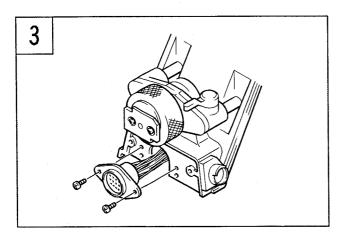
2-3. REPLACEMENT OF CONNECTORS

2-3-1. Replacement of VF Connector

- 1. Carry out Steps 1 to 4 in Section 2-2 "REPLACEMENT OF CCD UNIT".
- 2. Disconnect the two connectors, CN20 on the ${\rm HN}{-}135$ board and CN4 on the RG-20/20P board.



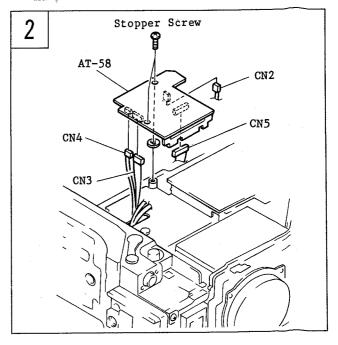
3. Remove the two screws securing the VF connector to the camera and pull out the VF connector with harness connected.



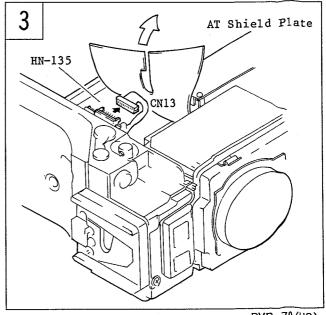
4. When installing a new VF connector, reverse the procedures for removal.

2-3-2. Replacement of LENS Connector

- Remove the left side panel, referring to Section 2-1 "CABINET REMOVAL".
- 2. Remove the two stopper screws and remove the AT-58 board. Disconnect the four connectors, CN2, CN3, CN4 and CN5 on the AT-58 board.



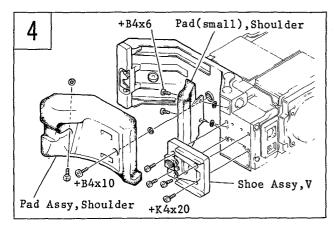
3. Lift up the AT SHIELD PLATE and disconnect the connector CN13 on the HN-135 board.



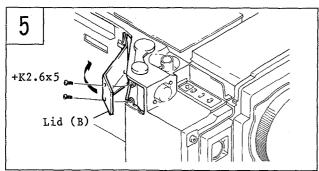
BVP- 70 (UC)

2-4

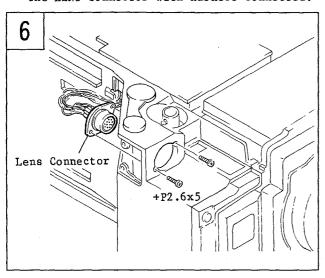
4. Lay the BVP-70/70P as illustrated. Remove the two screws (+B4x6) securing the SMALL SHOULDER PAD and remove the two screws (+B4x10) securing the SHOULDER PAD ASSY. Remove the four screws (+K4x20) securing the V SHOE ASSY.



5. Remove the two screws (+K2.6x5) and remove the lid (B).

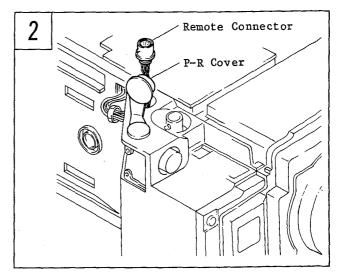


6. Remove the two screws (+P2.6x5) and remove the LENS connector with harness connected.

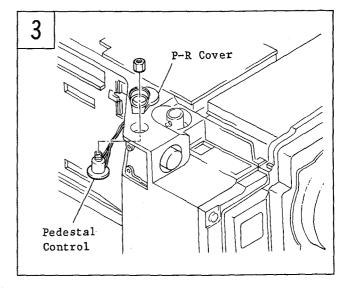


2-3-3. Replacements of REMOTE Connector and PEDESTAL Control

- 1. Carry out Steps 1 to 5 in Section 2-3-2
 "Replacement of LENS Connector".
- 2. Uncover the P-R cover and remove the REMOTE connector as illustrated.



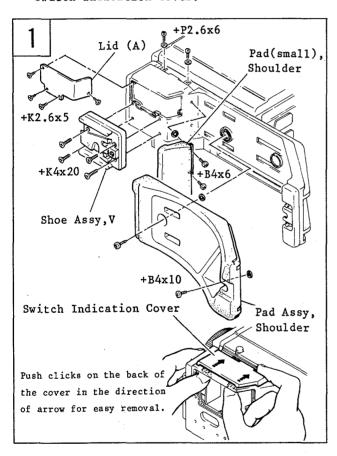
3. Uncover the P-R cover and remove the PEDESTAL control and nut as illustrated.



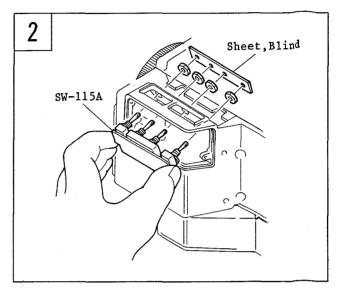
2-4. REPLACEMENT OF FUNCTION SWITCHES

2-4-1. Replacement of Switches on SW-115A Board

1. Lay the BVP-70/70P as illustrated. Remove the SHOULDER PAD ASSY, SMALL SHOULDER PAD and V SHOE ASSY. Remove the two screws (+K2.6x5) and remove the lid (A). Remove the two screws (+P2.6x6) and remove the switch indication cover.



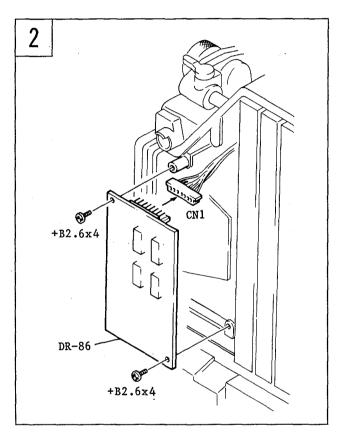
2. Remove the blind sheet and remove the four nuts securing the switches. Pull out the SW-115A board with the switches mounted.



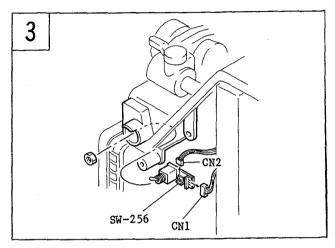
Desolder a switch to be replaced for removal. Replace it with a new one.

2-4-2. Replacement of Shutter Switch

- 1. Remove the right side panel, referring to Section 2-1 "CABINET REMOVAL".
- 2. Remove the two screws (+B2.6x4). Disconnect the connector CN1 on the DR-86 board and remove the DR-86 board.



3. Disconnect the two connectors, CN1 and CN2 on the SW-256 board. Remove the nut securing the switch and pull out the SW-256 board with the switch mounted.



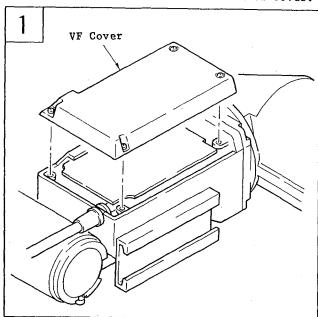
4. Desolder the switch for removal. Replace it with a new one.

2-5. REPLACEMENT OF PARTS FOR VIEWFINDER

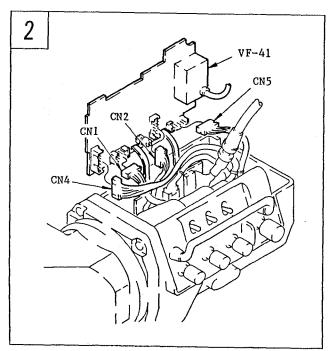
2-5-1. Replacement of CRT

DISASSEMBLE

1. Loosen four screws and remove the VF cover.

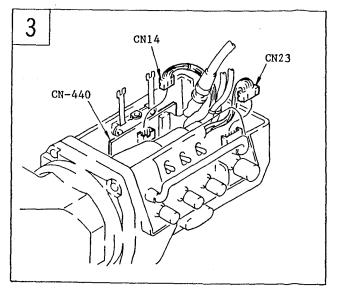


2. Remove one screw and remove the VF-41 board. Disconnect the connector CN1, CN2, CN4, CN5 and anode cable on the VF-41 board.



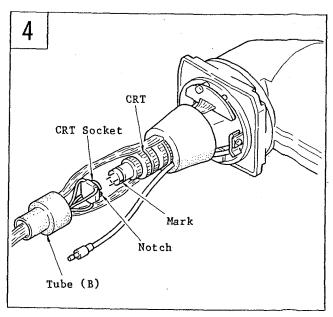
3. Loosen four screws and remove the VF tube.

Disconnect the connector CN14 on the CN-440 board. Disconnect the connector CN23 on the VR-108 board.

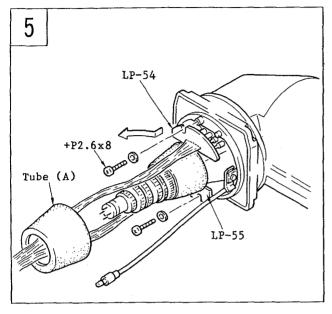


4. Remove the tube (B). Disconnect the CRT socket from the CRT.

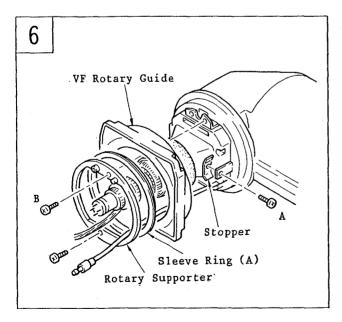
Note: When connecting the CRT socket to the CRT, match a mark on the CRT with a notch of the CRT.



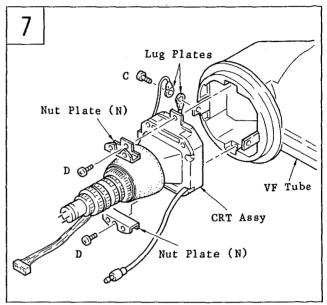
5. Remove the tube (A). Remove two screws and remove the LP-54 and LP-55 boards in the direction of arrow.



6. Remove the screw (A) and remove the stopper. Remove two screws (B) and remove the rotary supporter, sleeve ring (A), VF rotary guide.



7. Remove the screw (C) and remove the two lug Remove the screw (D) and remove plates. Remove the CRT ASSY from the nut plate. the VF tube.

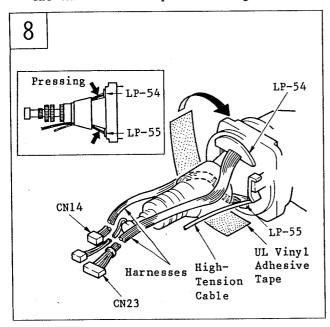


ASSEMBLE

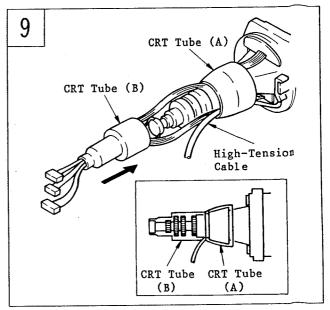
8. Put all wire harnesses from the LP-54 and LP-55 boards together and fasten them with UL vinyl adhesive tape while pressing them in the direction shown by the arrows so that they are not laid on one another.

The high-tension cable shall be kept straight.

The tied harnesses should be pushed against the CRT so that they do not bulge out.



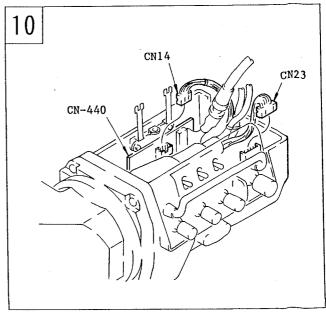
9 Cover the harnesses with CRT tubes (A) and (B) as shown in the figure. Care must be taken so that the harnesses are not slack within the tubes.



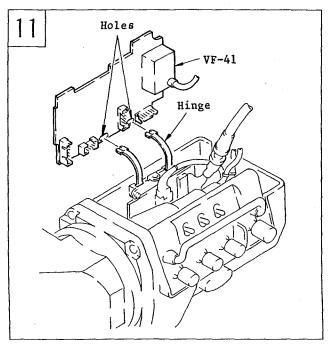
10. Install the VF tube, where the CRT is incorporated, into the VF body so that the harnesses are not placed between the tube and the body.

Connect the CN23 harness (from the LP-54 board) to the VR-78 board.

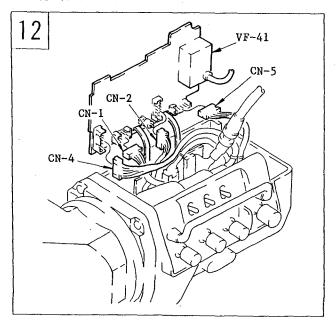
Connect the CN14 harness (from the LP-55 board) to the CN-440 board.



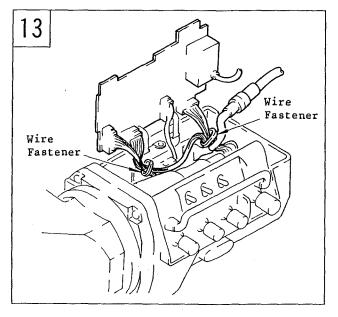
11. Insert the hinge into holes of the VF-41 board.



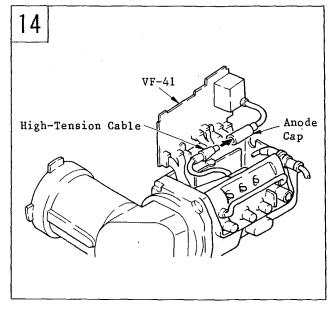
12. Connect CN1, CN2, CN4, and CN5 to the VF-41 board.



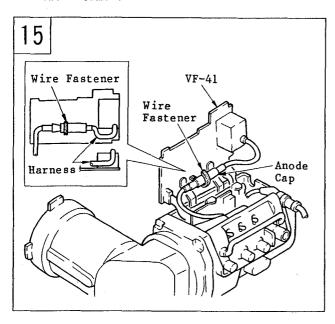
13. Clamp the harnesses with the wire fastener.



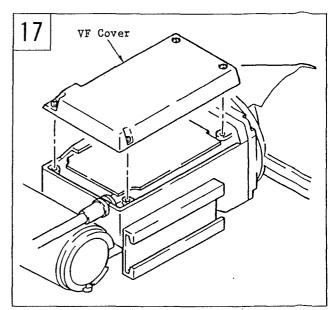
14. Insert the high-tension cable (from the CRT) into the anode cap of the VF-41 board until it locks.



15. Clamp the anode cap in the place shown in the figure with the wire fastener and position the harness at the side of the transformer.

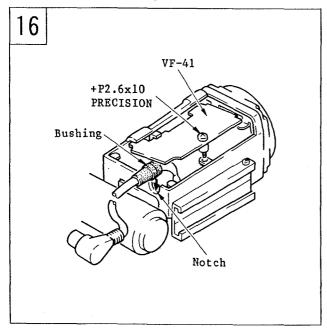


17. Install the VF cover.



16. Insert the rubber bushing of the VF cable into the notch of the VF body so it matches the shape of the notch and close the VF-41.

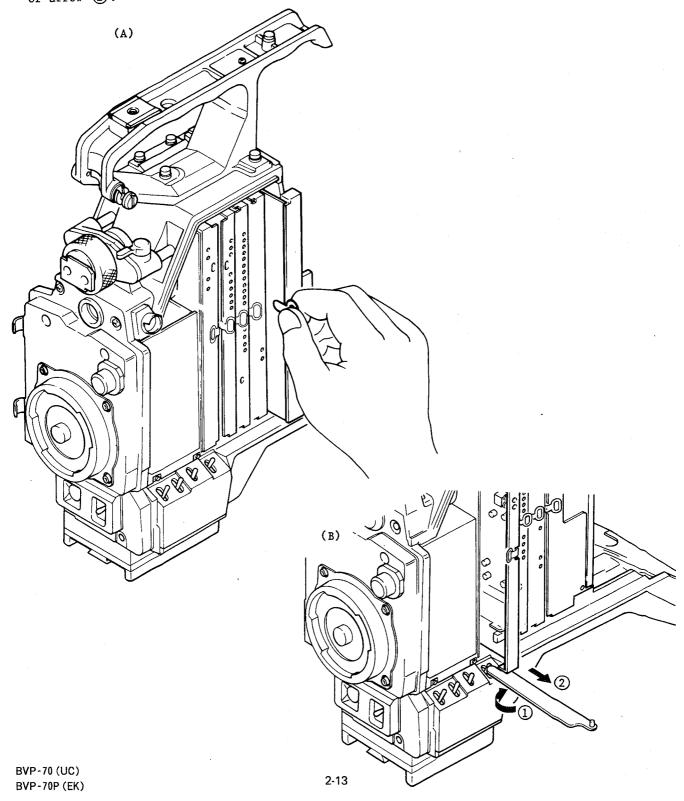
Lastly, fasten the VF-41 with the supplied precision screw (+P2.6x10), with the board mounting metals.



2-6. EXTRACTING THE BOARDS

- (A) Pull the pull lever attached to each board toward you.
- (B) Put the board extractor (supplied accessory) in a hole at the bottom of the board.

 Move the board extractor in the direction of arrow ①, then pull it in the direction of arrow ②.

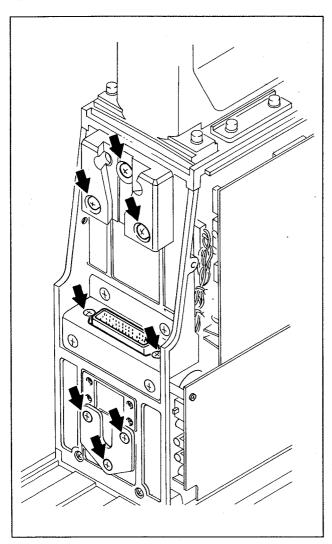


2-7. PRECAUTION ON REPLACEMENT OF VTR CONNECTOR (50P CONNECTOR)

The VTR connector (50-pin connector), camera shoe and chassis should be accurately positioned respectively. When the above parts are replaced, it is necessary to adjust using a high-precision special tool (CV positioning tool) so as to keep the accurate relation and to dock with any of BVV-5.

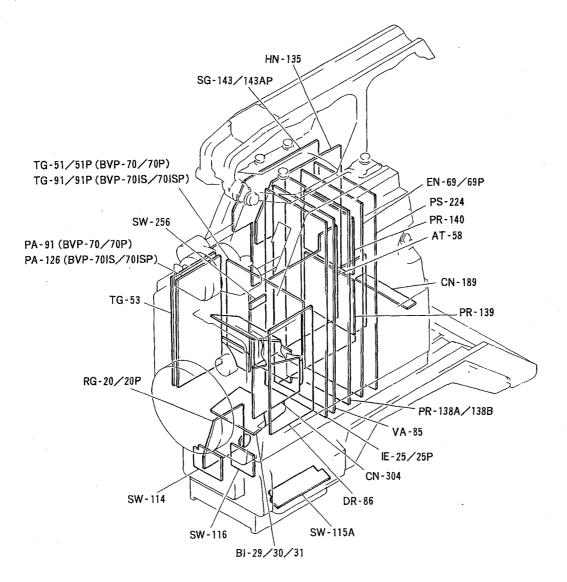
Avoid loosening or removing the eight screws shown in the figure.

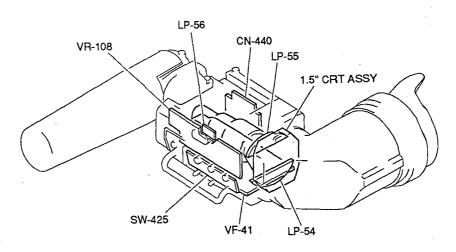
For details, refer to "BETACAM CAMERA manual - Replacement of 50-pin connector -" prepared by Sony Corporation.



SECTION 3 SERVICE INFORMATION

3-1. MAIN PARTS LAYOUT





3-2. CIRCUIT DESCRIPTION

• CCD CONTROL SYSTEM (TG-51/51P, TG-53, DR-86, BI-29, 30, 31, PA-91 boards)

NOTE: In early production units of BVP-70IS/70ISP, TG-51/51P and PA-91 boards were used, However, in current production units, TG-91/91P and PA-126 boards are used.

. TG-51/51P (TG-91/91P) board

It sends the pulse for driving the CCD to DR-86 board and the pulse for sampling the video signal output from the CCD to PA-91 (PA-126) board. Driving pulse synchronizes with the synchronizing signal sent from SG-143/143P board.

14MHz counted down from 28MHz is also supplied to SG-143/143P board.

. DR-86 board

It converts the driving pulse sent from TG-51/51P (TG-91/91P) board so as to drive the CCD directly. Converted pulse is sent to BI-29, 30, 31 boards and transmitted to the CCD.

. BI-29, 30, 31 boards

It mounts the CCD. Driving pulse and DC voltage for control are added to the CCD on the board.

The video signal output from the CCD is sent through the emitter follower to PA-91 (PA-126) board.

. PA-91 (PA-126) board

It eliminates the pulse component of the video signal sent from BI-29, 30, 31 boards. Then the signal processings such as the black level fixing and amplification by preamplifier are performed on the board, then the video signal is sent to VA-85 board.

• VIDEO SIGNAL SYSTEM (VA-85, IE-25/25P, PR-138A/138B, EN-69/69P boards)

. VA-85 board

It amplifies the video signal sent from PA-91 (PA-126) board and processes the black shading correction, gain-up control, blanking cleaning and white shading correction. It also selects the video signal or the TEST SAW signal.

. IE-25/25P board

It generates the detail signal obtained from G and R video signal so as to improve resolution. The detail signal is sent to PR-138A/138B board, then added to R, G and B video signals.

G video signal is delayed by 1H, then sent to PR-138A/138B board.

. PR-138A/138B board

The masking signal and detail signal are added to R, G and B video signals respectively and the flare compensation, pedestal control, knee correction, white clipping and gamma correction are performed on the board. Then the video signal is sent to EN-69/69P board.

. EN-69/69P board

It generates the luminance (Y) signal, color difference (B-Y, R-Y) signals and composite video (VBS) signal obtained from R, G and B video signals. It also supplies the SMPTE: NTSC (EBU:PAL) color-bar signals.

POWER SUPPLY SYSTEM (PS-224 board)

. PS-224 board

Externally supplied unregulated DC power is sent to the switching regulator, DC to DC converter and series regulator to generate voltages of +8.8Vdc, +5Vdc and -5Vdc for the respective boards.

It also supplies voltages for the VIEWFINDER and for CCD control.

SYNCHRONIZING SIGNAL SYSTEM (SG-143/143AP board)

. SG-143/143AP board

It generates various synchronizing signals. It detects the genlock signal automatically and synchronizes with it.

PS-224 • AUTOMATIC CONTROL SYSTEM (AT-58, boards)

. AT-58 board

Microcomputer unit on AT-58 board sends to the control signal and compensation signal to appropriate boards in accordance with the selection of function switches.

It also detects the internal temperature, position of color temperature conversion filter, PEDESTAL control and video level automatically, then compensates the video signals and displays various warnings.

. PS-224 board

If contains the auto iris circuit and VTR-CAMERA interface circuit.

The former detects the video level at any time and adjusts the iris control.

The latter controls the input and output of the START/STOP control signal and warning signal between camera and VTR.

3-3. SERVICING PRECAUTION

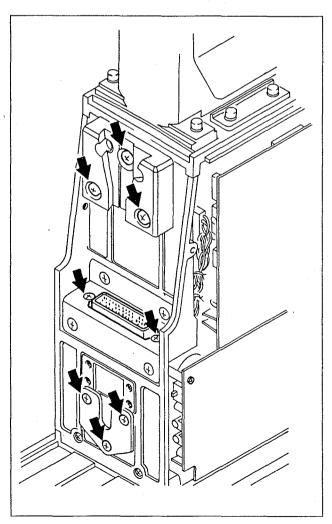
3-3-1. Precautions on Replacement of VTR Connector (50P Connector)

The VTR connector (50 pin connector) is attached using a high-precision special tool (CV positioning) so as to keep the accurate positioning relation with VTR mount (C shoe) and to dock with any of BVV-1/1PS, BVV-1A/1APS and BVV-5/5PS.

Avoid to loosen or remove the screws for 50P connector, C SHOE and stopper (in all, eight

It is necessary to adjust using a jig, when the above parts are replaced.

For replacement of the VTR connector (50-pin connector), contact your Sony dealer.



3-3-2. Warning of CCD Image Sensor Replacement

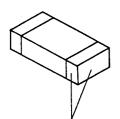
The BI-29, 30, 31 boards on which the CCD is mounted had better not be removed.

When removing it, the CCD is sometimes broken by the static electricity.

If the CCD is broken, the whole CCD unit must be replaced.

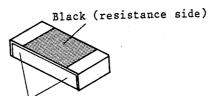
3-3-3. Precaution on Replacement of Chip Parts

Capacitor



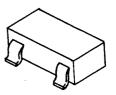
Covered with electrode.

Resistor



Not covered with electrode.

Diode and Transistor



Tools required:

Soldering iron of approx. 20W (Use a temperature controller, if possible, which can control the iron temperature to 270±10°C.)

Braided wire (SOLDER TAUL)

Solder (A solder of 0.6mm in diameter is recommended.)

Tweezers

Soldering conditions:

Iron temperature of 270±10°C

A connector should be soldered within 2 seconds.

The chip parts removed should not be used again.

For details, refer to CHIP COMPONENTS MANUAL, Sony's parts No. 9-972-289-91 prepared by Sony Corporation.

Procedures

- 1. To remove a resistor or capacitor, place the tip of a soldering iron on chip parts to heat the parts, and then move it horizontally for removal while being desoldered. For removal of a diode or transistor, heat the one side, with two pins, of chip parts at the same time, set the parts up when desoldered, and remove the two pins. then, remove the pin on another side.
- 2. Absorb solder by using a braided wire to smooth the land surface of board after removal.
- 3. Confirm by visual check that no trace of the removed chip parts is peeled off and no adjacent parts is damaged or bridged.
- 4. Perform a thin pretinning on the trace.
- 5. Place new chip parts on the trace to solder its both sides.

3-3-4. Precaution of Replacement Parts

- 1. Safety Related on Components Warning
 Components identified by shading marked
 with A on the schematic diagrams, exploded views and electrical spare parts list
 are critical to safe operation. Replace
 these components with Sony parts whose
 parts numbers appear as shown in this
 manual or in service manual supplements
 published by Sony.
- 2. Standardization of Parts

 Replace Parts that are supplied from Sony
 Parts Center can sometimes have different
 shape and external appearance than what are
 actually used in equipment. This is due to
 "accommodating the improved parts and/or
 engineering changes" or "standardization of
 genuine parts."
 - . This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present."
 - Regarding engineering parts and diagrams changes in our engineering department, refer Sony service bulletins and service manual supplements.

3. Stocked of Parts

The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Orders for parts marked with "O" will be proceed, but allow for additional delivery time.

4. Units of Capacitors, Inductors, and Resistors

The following units are omitted in the schematic diagrams, exploded views, and electrical part lists unless otherwise specified;

Capacitor: μF Inductor: μH Resistor: Ω

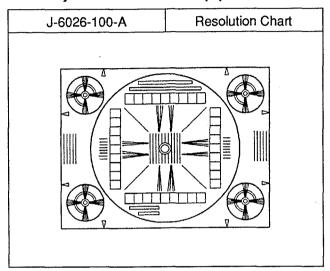
3-4. TOOLS AND JIGS

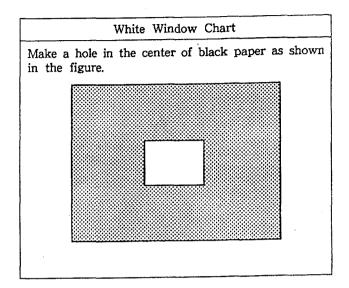
Part No.	Description		
A-7520-253-A	Extension board "EX-108" (supplied)		
J-6026-100-A	Resolution chart		
J-6026-110-A	Multi-burst chart		
J-6026-120-A	Registration chart		
Ј-6026-130-в	Gray-scale chart		
J-6029-140-A	Pattern box "PTB-500"		
Ј-6196-080-В	DC Power cord		
3-692-589-01	Board Extractor		
7-700-733-01	Adjusting screwdriver (1.5mm/4mm)		

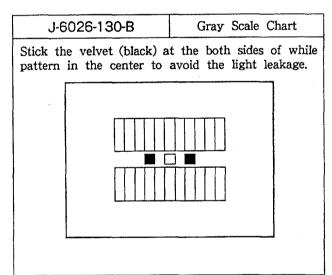
SECTION 4 ALIGNMENT

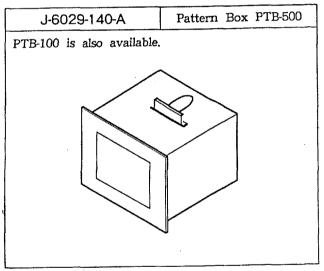
4-1. PREPARATION

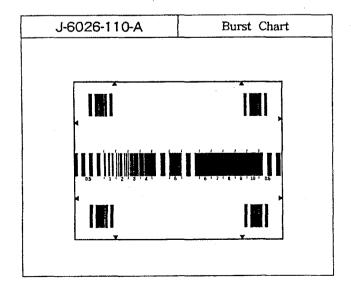
4-1-1. Adjustment Fixtures and Equipment

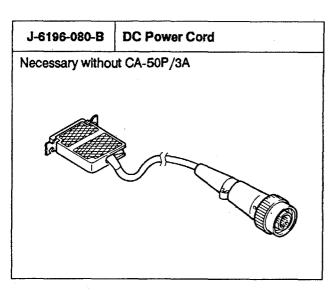


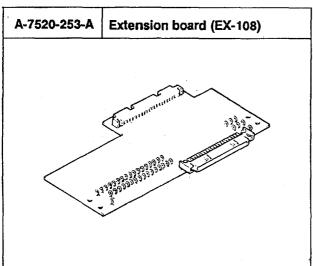


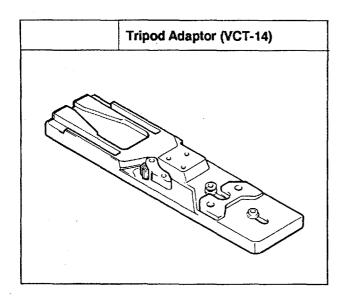










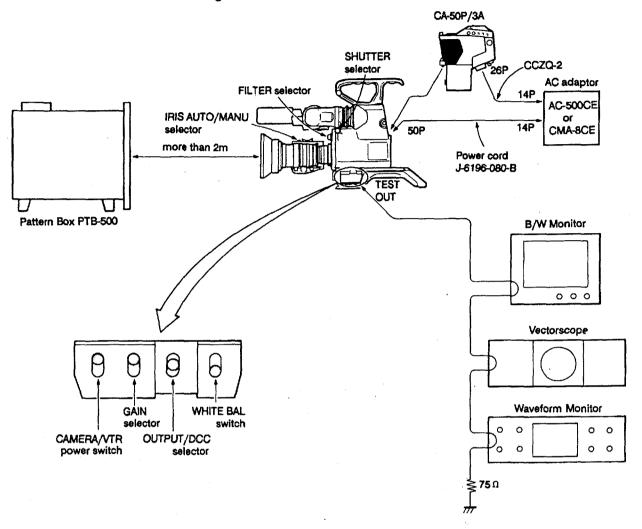


- Camera Adaptor (Sony CA-50P/3A)
 AC Adaptor (Sony AC-500CE or CMA-8CE)
 SC-H Phase Measuring Instrument(Tektronix 1751 or equivalent)

Measuring Instruments

- Oscilloscope
- Waveform Monitor
- Vectorscope
- Frequency Counter
- Digital Voltmeter
- B/W Monitor (H Resolution; more than 700 TV lines)

4-1-2. Connection and Initial Setting



- 1. Before adjustmens, set the CAMERA/VTR power switch to "ON/STBY" position and warm up for ten minutes.
- 2. Reset the compensation data in the microprocessor. (See 4-1-3.Precaution of Adjustments)
- 3. Set the camera switches and controls as follows.

[Side panel]

CAMERA/VTR power switch: ON/STBY

GAIN selector:

0

OUTPUT/DCC selector:

CAM/OFF PRESET

WHITE/BAL switch: FILTER selector:

1(3200 K)

IRIS AUTO/MANU selector: MANU

MANU CLOSE

IRIS control: SHUTTER switch:

OFF

[IE-25P board]

S1 (DTL):

OFF

S2 (APERTURE):

OFF

[PR-138A board]

S1 (MASKING):

OFF

4-1-3. Precaution on Adjustments

Boards Extension

When IE-25P, VA-85, PR-138A, EN-69P, and SG-143P boards are extended or returned, be sure to set the CAMERA/VTR power switch to PREHEAT/SAVE position. When PS-224 board is extended or returned, be sure to set the switch of original power supply to OFF position.

Procedure of Resetting Compensation Data

Before step 3-14.Black Set Pedestal Adjustment and step 3-15.Flare Adjustment are carried out, the compensation data in the microprocessor must be reset in following order.

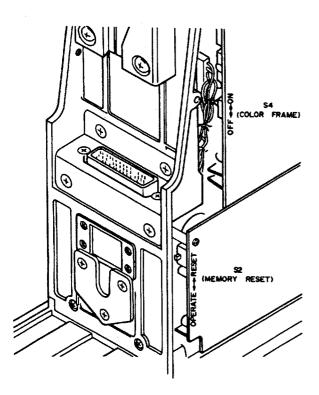
- 1. S2(MEMORY RESET)/AT-58 board → "RESET"
- 2. CAMERA/VTR power switch (side panel)

→ "PRE HEAT/SAVE"

Keep this switch position for ten seconds.

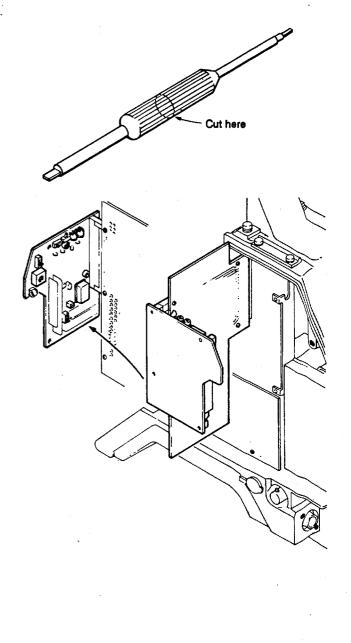
- 3. CAMERA/VTR power switch (side panel) → "ON/STBY"
- S2 (MEMORY RESET)/AT-58 board → "OPERATE"
 When the AUTO W/B BAL switch is not set to BLK or WHT position, the compensation data remains cleared (initial condition).

When the S2(MEMORY RESET) /AT-58 board switch is reset whenever the CAMERA/VTR power switch is set to OFF/SAVE position. Set the S2 switch to RESET position during adjustment.



SG-143P board adjustment

When step 2-2.SYNC WIDTH adjustment, step2-5.H BL KG adjustment and step 2-7.INT SC phase adjustment are carried out, a screw driver with short handle is necess ary for adjustments.



Earthing point

Use the GND terminal on the extension board, unless otherwise specified.

4-2. OVERALL ADJUSTMENT

STEP 1. POWER SUPPLY SYSTEM

STEP 1-1. DC Bias adjustment

STEP 1-2. Switching Frequency adjustment

STEP 1-3. +9.3V/+8.8V adjustment

STEP 1-4. IRIS Weighting adjustment

STEP 2.SYNCHRONIZING SIGNAL SYSTEM

STEP 2-1. Subcarrier frequency adjustment

STEP 2-2. SYNC width adjustment

STEP 2-3. SYNC phase adjustment

STEP 2-4. Burst flag adjustment

STEP 2-5. H BLKG width adjustment

STEP 2-6. INT SC phase adjustment

STEP 3.VIDEO SIGNAL SYSTEM

STEP 3-1. DC bias adjustment

STEP 3-2. VA Gain adjustment

STEP 3-3. Pre-Black set adjustment

STEP 3-4. VA Clip Level adjustment

STEP 3-5. Test signal waveform adjustment

STEP 3-6. Pre-Knee adjustment

STEP 3-7. Modulation Balance adjustment

STEP 3-8. Black Shading adjustment

STEP 3-9. White Shading adjustment

STEP 3-10. PR IN Gain adjustment

STEP 3-11. Pre-Pedestal level and PR OUT Gain adjustment

STEP 3-12. Gamma Balance adjustment

STEP 3-13. Flare DC Balance adjustment

STEP 3-14. Carrier Balance adjustment

STEP 3-15. Black-set and Pedestal adjustment

STEP 3-16. Flare adjustment

STEP 3-17. R,G,and B Video level adjustment

STEP 3-18. EN-Y Level adjustment

STEP 3-19. Color-bar adjustment

STEP 3-20. UV Gain adjustment

STEP 3-21. Burst adjustment

STEP 3-22. VTR Y Gain adjustment

STEP 3-23. VTR R-Y Gain adjustment

STEP 3-24. VTR B-Y Gain adjustment

STEP 3-25. Zebra Level adjustment

STEP 3-26. Gamma correction adjustment

STEP 3-27. Manual Knee and white clip adjustment

STEP 3-28. Automatic Knee adjustment

STEP 4. IMAGE ENHUNCER SYSTEM

STEP 4-1. Clip Level adjustment

STEP 4-2. V DTL Null adjustment

STEP 4-3. DTL Black Clip adjustment

STEP 4-4. DTL Alias adjustment

STEP 4-5. H DTL NULL adjustment

STEP 4-6. Black Balance adjustment

STEP 4-7. Clispening adjustment

STEP 4-8. Level Dependent adjustment

STEP 4-9. Aperture Alias adjustment

STEP 4-10. Aperture Null adjustment

STEP 4-11. H/V RATIO adjustment

STEP 4-12. Aperture adjustment

STEP 4-13. Detail Level adjustment

STEP 5. RESOLUTION ADJUSTMENT

STEP 6. POWER SAVE ADJUSTMENT

STEP 7. AUTO CONTROL SYSTEM

STEP 7-1. Auto iris adjustment

STEP 7-2. LOW VIDEO adjustment

STEP 7-3. Character Size adjustment

STEP 8. VIEWFINDER SYSTEM

STEP 8-1. Preparation for Viewfinder system adjustment

STEP 8-2. Vertical Hold adjustment

STEP 8-3. Horizontal Hold adjustment

STEP 8-4. DC Balance adjustment

STEP 8-5. BRIGHT SET adjustment

STEP 8-6. Focus adjustment

STEP 8-7. Picture Frame adjustment

STEP 8-8. PEAKING adjustment

STEP 1. POWER SUPPLY SYSTEM

STEP 1-1. DC Bias adjustment
+
STEP 1-2. Switching Frequency adjustment
†
STEP 1-3. +9.3V/+8.8V adjustment
↓
STEP 1-4. IRIS Weighting adjustment
+
STEP 2. Synchronizing signal system
↓
STEP 3. Video signal system
. 🕇
STEP 4. Image Enhuncer system
Į.
STEP 5. Resolution adjustment
STEP 6. Power Save adjustment
. •
STEP 7. Auto control system
↓
STEP 8. Viewfinder system

Note: 1. The adjustment is not necessary if error is within ±3% of rated voltage.

2. When performing this adjustment, be sure to readjust all of the following (to STEP 8-7. Picture Frame adjustment).

Equipment: To be extended: PS-224 board

Digital voltmeter

Trigger:

Preparation

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

Measure TP1 between TP1 (+) and TP2 (-)

on the PS-224 board.

Adjust point:

ORV1(BIAS SET)/PS-224 board

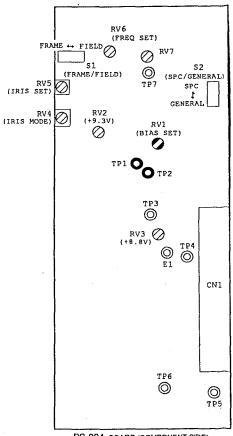
Specification:

+1.83 ± 0.01 Vdc

Adjustment procedurs

Note:

BVP-70(UC)



PS-224 BOARD (COMPONENT SIDE)

STEP1. POWER SUPPLY SYSTEM ||||||||||||||

STEP 1-2. Switching Frequencu adjustment

Note: The adjustment is not necessary if error is within $\pm 2\%$ of rated voltage.

Equipment:

Frequency counter

To be extended: PS-224 board

Trigger: Preparation

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point: TP7(GND:E1)/PS-224 board

ORV6(FREQ SET)/PS-224 board

Specification:

 $36.5 \pm 0.8 \text{ kHz}$

Adjustment procedurs

RV6 (FREQ SET) \bigcirc RV7 S1 (FRAME/FIELD) O TP7 RV5 SPC ‡ GENERAL RV4 (IRIS MODE) RV2 (+9.3V) RV1 (BIAS SET) TP3 RV3 (+8.8V) TP6 0 O TP5

PS-224 BOARD (COMPONENT SIDE)

Note: 1. The adjustment is not necessary if error is within 3% of rated voltage.

2. When performing this adjustment, be sure to readjust all of the following (to STEP 8-7.Picture Frame adjustment)

Equipment: Digital voltmeter **To be extended:**PS-224 board

Trigger: Preparation

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point: mentioned below mentioned below

Specification:

mentioned below

Adjustment procedurs

	Test point /PS-224	Adjust point /PS-224	Spec.:
+9.3V adjustment	TP3 (GND:E1)	Ø RV2	+9.3 ± 0.01 Vdc
+8.8V adjustment	TP4 (GND:E1)	Ø RV3	+8.8 ± 0.01 Vdc

PS-224 BOARD (COMPONENT SIDE)

STEP 1-4. IRIS Weighting adjustment

Note:

Equipment:

Oscilloscope

To be extended: PS-224 board

Trigger:

V-SAW(TP-29/extension board)

Preparation:

Object:

Monitor screen

Waveform monitor

Lens Zoom:

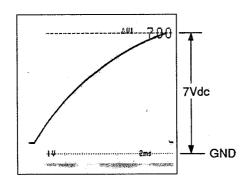
Lens iris:

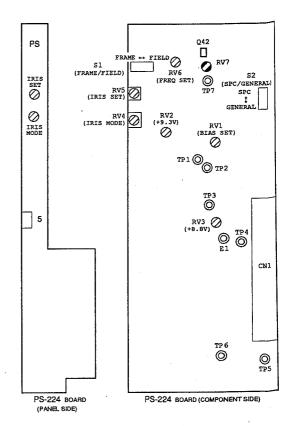
Test point: Adjust point: Q42 Emitter/PS-224 board ORV-7/PS-224 board

Specification:

mentioned below

Adjustment procedures:





STEP 2. SYNCHRONIZING SIGNAL SYSTEM

STEP 1. Power supply system



STEP 2-1. Subcarrier frequency adjustment



STEP 2-2. SYNC width adjustment



STEP 2-3. SYNC phase adjustment



STEP 2-4. Burst flag adjustment



STEP 2-5. H BLKG width adjustment



STEP 2-6. V BLKG width adjustment



STEP 2-7. INT SC phase adjustment



STEP 3. Video signal system



STEP 4. Image Enhuncer system



STEP 5. Resolution adjustment



STEP 6. Power Save adjustment



STEP 7. Auto control system



STEP 8. Viewfinder system

STEP 2-1. Subcarrier frequency adjustment

Note: 1. Before adjustment, set the CAMERA/VTR power switch to ON/STBY position and warm up for ten minutes.

X1 (SC FREQ)

2. Make sure that the camera is not in GENLOCK mode.

Frequency counter Equipment: To be extended: SG-143P board

Trigger: Preparation

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point: TP26(GND:TP25)/extension board X1(SC FREQ)/SG-143P board

Specification:

4,433,619 ± 5Hz

Adjustment procedurs

Note:

BVP-70P(EK) BVP-7P(EK) BKP-503(EK)



Note:

Equipment:

Waveform monitor (WFM)

To be extended: SG-143P board

Trigger: Preparation

ENC/RGB switch (side panel)

"ENC"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point:

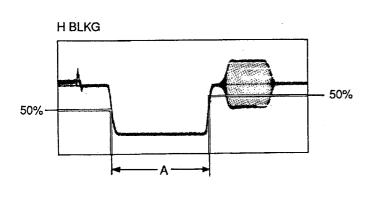
TEST OUT terminal

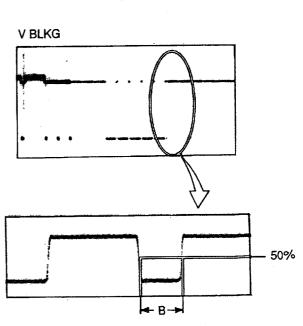
Specification:

 $A = 4.7 \pm 0.1 \mu s$

 $B = 2.3 \pm 0.1 \,\mu s$

Adjustment procedurs





(SYNC WIDTH

Equipment:

Oscilloscope To be extended: EN-69P board

Trigger: Preparation

ENC/RGB switch (side panel)

"ENC"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point:

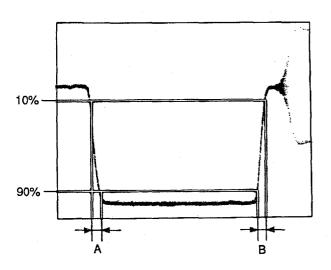
TP9(GND:TP11)/extension board **②** LV2 (SYNC PHASE)/EN-69P board

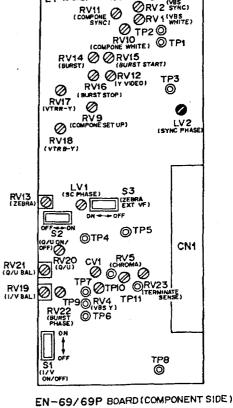
Specification:

 $A = B = 0.25 \pm 0.05 \,\mu s$ (Adjust so as to

disappear the overshoot and undershoot.)

Adjustment procedurs





Note:

Equipment:

Waveform monitor (WFM)

To be extended: EN-69P board

Trigger:

Preparation

ENC/RGB switch (side panel)

"ENC"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

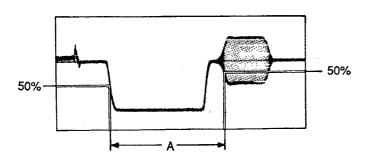
TEST OUT terminal

Adjust point:

RV15(BURST START)/EN-69P board

Specification: $A = 5.6 \pm 0.1 \mu s$

Adjustment procedurs



RV3 (ves set up) ORV2 SYNC O TP2 O TP1 RV14 Ø PV15
(BURST) START) ORV12 RV17 0 0 RV9 (COMPONE SET UP) RV18 (VTRB-Y) RV13 CN1 (CHROMA)

(P7 Ø Ø Ø Ø

(P7 Ø TP10 Ø RV23 RV19 TP8

EN-69/69P BOARD (COMPONENT SIDE)

Note:

Equipment:

Waveform monitor (WFM)

To be extended: SG-143P board

Trigger: Preparation

1. When the pattern box is PTB-500, insert the filter unit.

2. ENC/RGB switch (side panel)

"ENC"

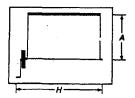
Object:

White window

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the moni-

tor = Chart frame

Lens iris:

A=700±10 mV (at TEST OUT terminal)

Test point:

TEST OUT terminal

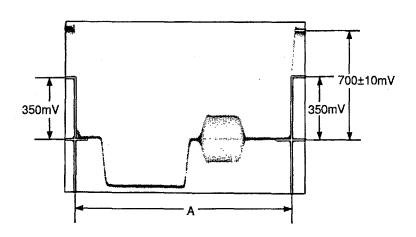
Adjust point:

◆ S1(H BLKG SELECT)/SG-143P board

Specification:

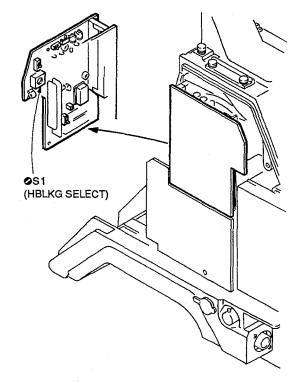
 $A=12.05\pm0.25 \,\mu s$

Adjustment procedurs



Note:

BVP-70P(EK) BVP-7P(EK) BKP-503(EK)



STEP 2-6. INT SC phase adjustment

Note: The procedure stated below applies to the adjustments where the Tektronix 1751 is used.

If any other measuring instrument is used, observe the instructions given in the operation manual attached to it.

Equipment: SO

SC-H Phase measuring instrument

To be extended: SG-143P board

Trigger: Preparation

- 1. Disconnect the vectorscope, and connect the Tektronix 1751 instead.
- 2. Put the Tektronix 1751 into the SC-H mode.

Object:

Monitor screen

Waveform monitor



Lens iris:

Test point:

VIDEO OUT connector

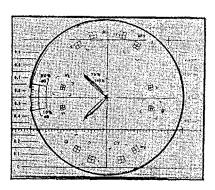
Adjust point:

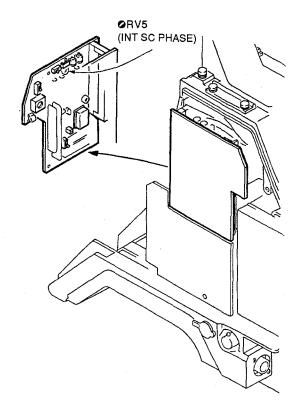
⊘RV5(INT SC PHASE)/SG-143P

Specification:

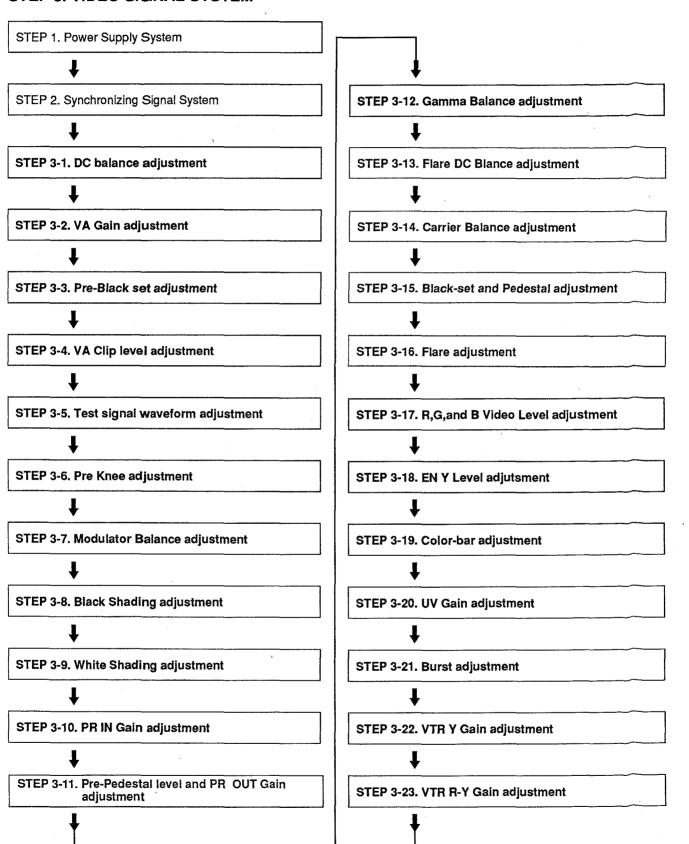
Adjustment procedures

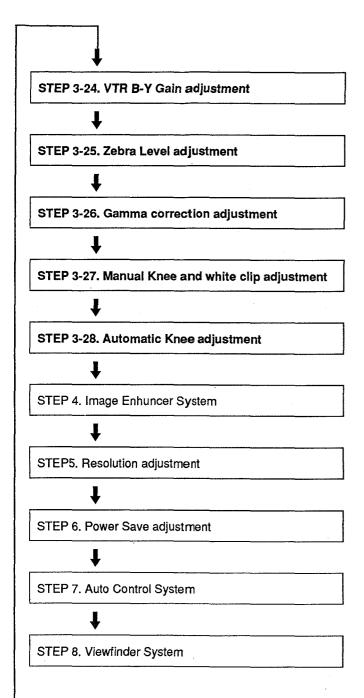
Position the luminous line of the burst (SC) and the luminescent spot of H properly.





STEP 3. VIDEO SIGNAL SYSTEM





STEP 3-1. DC bias adjustment

Note: Carry out the STEP 3-1. DC bias adjustment to the STEP 3-4. VA Clip Level adjustment in order, or their adjustments will become invalid.

Equipment:

Oscilloscope To be extended: VA-85 board

Trigger: Preparation

S2(TEST)/VA-85 board ØRV6(G GAIN)/VA-85 board ORV12(R GAIN)/VA-85 board

ØRV1(B GAIN)/VA-85 board

"OFF" "fully clockwise" "fully clockwise" "fully clockwise"

ORV53(R CLIP)/VA-85 board ORV54(G CLIP)/VA-85 board ORV55(R CLIP)/VA-85 board

"fully clockwise" "fully clockwise"

"fully clockwise"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Close "C"

Test point: Adjust point: mentioned below mentioned below

Specification:

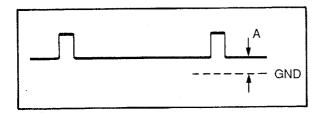
mentioned below

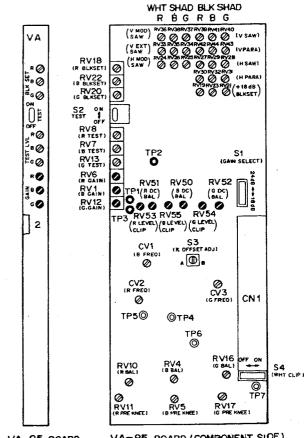
Adjustment procedures

Adjust every channel as stated above.

	Test point/ VA-85 board	Adjust point/ VA-85 board	Specification
G-ch	TP3	⊘ RV52	A=+0.69±0.05Vdc
R-ch	TP2	Ø RV51	A=+0.69±0.05Vdc
B-ch	TP1	⊘ RV50	A=+1.2±0.1Vdc

(GND:GND on the extension board)





VA-85 BOARD (COMPONENT SIDE) VA-85 BOARD (PANEL SIDE)

Note: After this adjustment is completed, be sure to carry out STEP 3-2. VA Gain adjustment.

STEP 3-2. VA Gain adjustment

Note: 1. Use a white pattern chart for this adjustment. Adjust the lighting so that the white area is exactly 3200K of color

2. When the pattern box is used, well maintained pattern box should be used.

Equipment: Oscilloscope To be extended: VA-85 board

Trigger:

Preparation

HD(TP25/extension board)

RV5(B PRE KNEE)/VA-85 board "fully counterclockwise" PKV17(G PRE KNEE)/VA-85 board "fully counterclockwise"

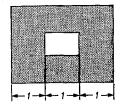
◆RV11(R PRE KNEE)/VA-85 board "fully counterclockwise"

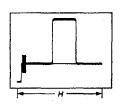
Object:

White window chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the monitor = chart

frame

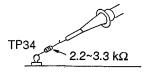
Lens iris:

Adjust the iris control so that the white level "X" at TP34 (GND: TP33) on the extension board is as

follows:

BVP-70P: "X"=0.25±0.03V BVP-70ISP: "X"=0.275±0.03V







VA

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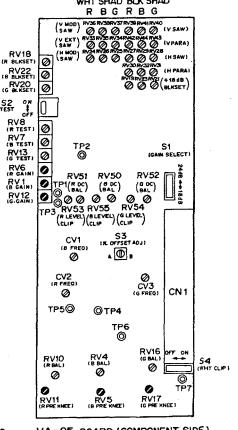
TEST (Q)

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2



WHT SHAD BUK SHAD

4. ALIGNMENT

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VIDEO CICNA!

CTED 3

VA-85 BOARD (COMPONENT SIDE)

Note: When measuring the TP34, connect the resistance (2.2~3.3 k Ω) between the probe

and the TP34.

Test point:

mentioned below mentioned below

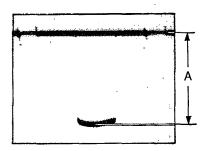
Adjust point: Specification:

mentioned below

Adjustment procedures

Adjust every channel as stated above.

	Test point/ extension board	Adjust point/ VA-85 board	Specification
G-ch	TP9	⊘ RV12	
B-ch	TP5	@ RV1	A=
R-ch	TP7	⊘ RV6	0.5 ± 0.01 Vp-p



Equipment:

Oscilloscope

To be extended: VA-85 board Trigger:

HD(TP25/extension board)

Preparation

"OFF"

S2 (TEST)/VA-85 board OUTPUT/DCC switch (side panel)

"CAM/OFF"

GAIN switch (side panel)

"0"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Close "C"

Test point: Adjust point: mentioned below

mentioned below

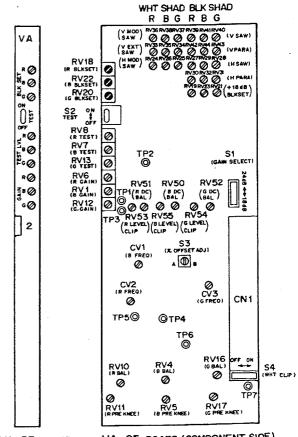
Specification:

mentioned below

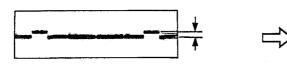
Adjustment procedures

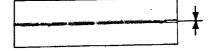
	Test point/ extension board	Adjust point/ VA-85 board
G-ch	TP9	Ø RV20
R-ch	TP7	Ø RV18
B-ch	TP5	⊘ RV22

(GND:GND on the extension board)



VA-85 BOARD (PANEL SIDE) VA-85 BOARD (COMPONENT SIDE)





STEP 3-4. VA Clip Level adjustment

Note: Be sure to complete STEP 3-2. VA Gain adjustment.

Equipment:

Oscilloscope

To be extended: VA-85 board

Trigger:

HD(TP25/extension board)

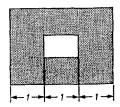
Preparation

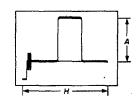
Object:

White window chart

Monitor screen

Waveform monitor





Lens Zoom:

Shoot the white window chart as stated

above.

Lens iris:

Open

Test point:

mentioned below

Adjust point:

mentioned below

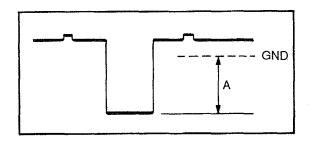
Specification:

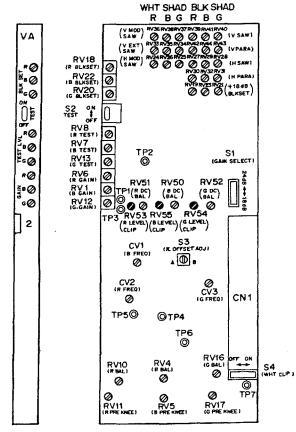
mentioned below

Adjustment procedures

Adjust every channel as shown below;

	Test point/ VA-85	Adjust point/ VA-85 board	Specification	
G-ch	TP6	⊘ RV54		
B-ch	TP4	⊘ RV55	A=	
R-ch	TP5	⊘ RV53	-3.6±0.05 Vdc	





VA-85 BOARD (PANEL SIDE)

VA-85 BOARD (COMPONENT SIDE)

Note: Be sure to complete STEP 3-4. VA Clip Level adjustment.

Equipment:

Oscilloscope To be extended: VA-85 board

Trigger:

HD(TP25/extension board)

Preparation

S2 (TEST)/VA-85 board

"ON"

◆RV5(B PRE KNEE)/VA-85 board "fully counterclockwise" ◆RV17(G PRE KNEE)/VA-85 board "fully counterclockwise" ◆RV11(R PRE KNEE)/VA-85 board "fully counterclockwise"

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point Adjust point:

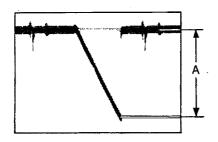
mentioned below mentioned below

Specifications: mentioned below

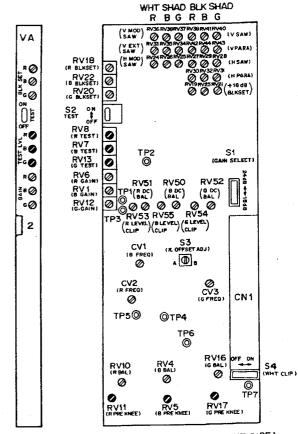
Adjustment procedures

Adjust every channel as stated above.

	Test point/ extension board	Adjust point/ VA-85 board	Specification	
G-ch	TP9	⊘ RV13		
B-ch	TP5	⊘ RV7	☐ A= 0.5 ± 0.01Vp-p	
R-ch	TP7	Ø RV8	10.5 ± 0.01 Vp-p	







VA-85 BOARD (PANEL SIDE)

VA-85 BOARD (COMPONENT SIDE)

Equipment: Oscilloscope **To be extended:** VA-85 board

Trigger: HD (TP25/extension board)

Preparation

GAIN switch (side panel) "9dB"
S2 (TEST)/VA-85 board "ON"
S4 (CLIP)/VA-85 board "OFF"

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

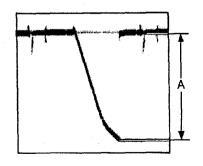
Test point Adjust point: mentioned below mentioned below

Specifications: mentioned below

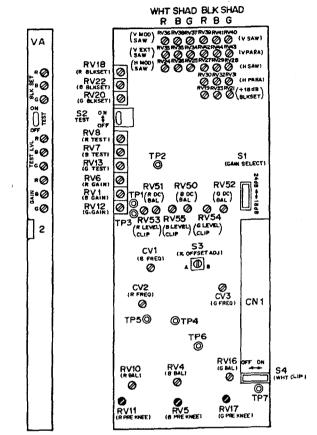
Adjustment procedurs

· Adjust every channel as stated above.

	Test point/ extension board	Adjust point/ VA-85 board	Specification
G-ch	TP9	O RV17	
B-ch	TP5	O RV5	A=
R-ch	TP7	@ RV11	1.15 ± 0.02Vp-p



Note: After this adjustment is completed, set the S4 (CLIP)/VA-85 board to "ON".



VA-85 BOARD (PANEL SIDE) VA-85 BOARO (COMPONENT SIDE)

STEP 3-7. Modulator Balance adjustment

Note:

Equipment:

Oscilloscope

To be extended: VA-85 board Trigger:

VD(TP26/extension board)

Preparation

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Close "C"

Test point:

mentioned below

Adjust point:

mentioned below

Specification:

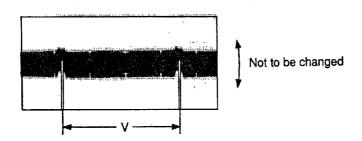
mentioned below

Adjustment procedurs

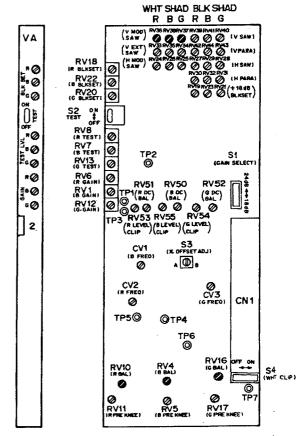
· Adjust every channel as shown below;

Adjust the "B" so that the waveform does not change even if @ "A" is turned both clockwise and counterclockwise fully.

	Test point/	Adjust point/VA-85 board	
	extension board	Α	В
G-ch	TP9	Ø RV37	Ø RV16
B-ch	TP5	⊘ RV38	Ø RV4
R-ch	TP7	Ø RV36	⊘ RV10



Note: After this adjustment is completed, carry out STEP 3-9. White shading adjustment.



VA-85 BOARD (PANEL SIDE) VA-85 BOARD (COMPONENT SIDE)

Equipment: Wa

Waveform monitor (LUM mode)

To be extended: VA-85 board

Trigger: Preparation

GAIN switch (side panel) ENC/RGB switch (side panel) S2(TEST)/VA-85 board "18dB"

"RGB"
"OFF"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Close "C"

Test point:

TEST OUT terminal

Adjust point: men

mentioned below

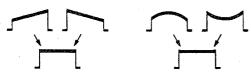
Specification:

mentioned below

Adjustment procedures

- 1. Adjust the PEDESTAL control (side panel) so that the pedestal level is approx. 70mV.
- 2. Set the LUM mode at the waveform monitor, and set the VOLT FULL SCALE range at 0.5.
- 3. Adjust the every adjusting point so that the waveform is flat.

	Switches setting	Adjusting point/VA-85 board			
	(side panel)	H SAW	V SAW	H PARA	V PARA
G-ch	G/OFF "G" R/OFF/B "OFF"	⊘ RV28	⊘ RV40	Ø RV31	Ø RV43
R-ch	G/OFF "OFF" R/OFF/B "R"	Ø RV27	⊘ RV39	Ø RV30	Ø RV42
B-ch	G/OFF "OFF" R/OFF/B "B"	Ø RV29	Ø RV41	Ø RV32	⊘ RV44



Note: After this adjustment is completed, set the switches as follow;

- GAIN switch (side panel)
- "O"
- PEDESTAL control (side panel)
- "mechanical center"

WHT SHAD BLK SHAD RBGRBG VΑ RV18 .0 0 RV22 0 (+ 18 dB) 0 . O Ø Ø E @ 0 *Ø **RV52 ₹**•Ø **ه**و، ' 2 . 0 CNI 0 TP5© ©TP4 TP6 0 RV10 S4 WHT CLIP 0

VA-85 BOARD (PANEL SIDE)

VA-85 BOARD (COMPONENT SIDE)

Note: 1. Before this adjustment is performed, be sure to complete STEP 3-7. Modulator Balance adjustment.

2. When using the lens with the EXTENDER attached, carry out the V EXT SAW adjustment. Before this adjustment, set the EXT lever of lens at X2 position and adjust the iris control so that the video level at TEST OUT terminal is 700 10mV. After this adjustment is completed, set the EXT lever at X1 position.

Equipment:

Waveform monitor(WFM) To be extended: VA-85 board

Trigger: Preparation

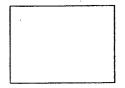
ENC/RGB switch (side panel) S4(WHT CLIP)/PR-134 board "RGB" "OFF"

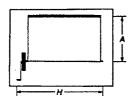
Object:

White window

Monitor screen

Waveform monitor





Lens Zoom:

Set the zoom control at TELE and shoot

the white area of white window chart.

Lens iris:

 $A = 700 \pm 10 mV$.

(at TEST OUT terminal) **TEST OUT terminal**

Test point: Adjust point:

mentioned below

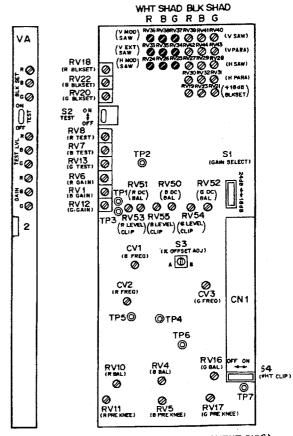
Specification:

mentioned below

Adjustment procedures

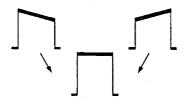
Adjust the every adjusting point so that the waveform is flat.

	Switches setting	Adjust point/VA-85 board			
	(side panel)	H MOD SAW	V MOD SAW	V EXT SAW	
G-ch	G/OFF "G" R/OFF/B "OFF"	⊘ RV25	⊘ RV37	⊘ RV34	
R-ch	G/OFF "OFF" R/OFF/B "R"	Ø RV24	⊘ RV36	⊘ RV33	
B-ch	G/OFF "OFF" R/OFF/B "B"	⊘ RV26	⊘ RV38	⊘ RV35	



VA-85 BOARD (PANEL SIDE)

VA-85 BOARD (COMPONENT SIDE)



STEP 3-10. PR IN Gain adjustment

Note: Be sure to complete STEP 3-4. TEST wafeform signal level adjustment.

Remove the PR-139 board and PR-140 board on the PR-138A board. Their boards are connected by the board connectors.

Equipment: Oscilloscope **To be extended:** PR-138A board

Trigger: CP(TP35/extension board)

Preparation

OUTPUT/DCC switch (side panel)
GAIN switch (side panel)

"CAM/OFF" "0dB"

S2(TEST)/VA-85 board

"ON"

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point:

mentioned below mentioned below

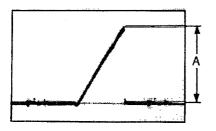
Specification:

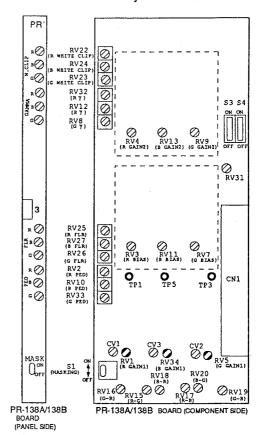
mentioned below

Adjustment procedurs

Adjust every channel as shown below.

	Test point/ PR-138A board	Adjust point/ PR-138A board	Specification
G-ch	TP3	Ø RV5	
B-ch	TP5	© RV34	A=
R-ch	TP1	Ø RV1	2.0 ± 0.1Vp-p





Equipment:

Oscilloscope, Wavefrom monitor

To be extended: PR-138A

Trigger:

CP(TP35/extension board)

Preparation:

"ON"

S2(TEST)/VA-85 board S4(WHT CLIP)/PR-138A board

"OFF"

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

mentioned below

Adjust point:

mentioned below

Specification:

mentioned below

Adjustment procedures:

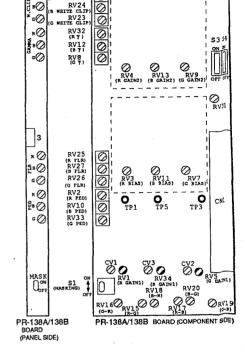
Adjust every channel as shown below.

1. Pre-pedestal level adjustment

Preparation:

S3(γON/OFF)/PR-138A board "ON"

	Test point/ extension board	Adjust point/ PR-138A board	Specification	
G-ch	TP17	RV33	A= 20 ± 2 mVp-p	
B-ch	TP16	RV10		
R-ch	TP18	RV2		

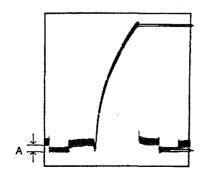


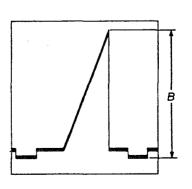
2. PR OUT Gain adjustment

Preparation:

S3(γON/OFF)/PR-138A board "OFF"

	Test point/ extension board	Adjust point/ PR-138A board	Specification	
G-ch	TP17	RV9		
B-ch	TP16	RV13	B= 700 ± 7 m Vp-p	
R-ch	TP18	RV4	70017111797	





Oscilloscope Equipment: To be extended: PR-138A board

Trigger:

CP(TP35/extension board)

Preparation

S2(TEST)/VA-85 board

"ON"

S4(WHT CLIP)/PR-138A board

"OFF"

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point: mentioned below mentioned below

Specifications: mentioned below

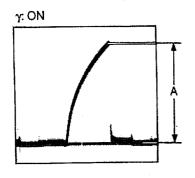
Adjustment procedures

Carry out G-channel, B-channel and R-channel adjustment as shown below.

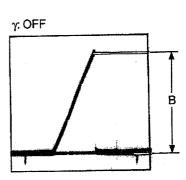
The peak level of waveform does not change even if the S3(y ON/OFF)/PR-138A board is set to ON or OFF.

PR	
RV22 G MEITE CLIP RV24 G MEITE CLIP RV24 G MEITE CLIP RV23 G MEITE CLIP RV3 RV12 RV1 RV1 RV1 RV1 RV1 RV1 RV1 RV1 RV1 RV8	S3 S4 S S4 S S4 S S4 S S4 S S S4 S S S4 S S S S4 S S S S
RV25 (R FLB)	RV31
MASK S1 OF CHASKING) OF	RV16 (8-AN1) (
PR-138A/138B BOARD (PANEL SIDE)	PR-138A/138B BOARD (COMPONENT SIDE)

	Test point/ extension board	Adjust point/ PR-138A board	
G-ch	TP17	Ø RV7	
B-ch	TP16	Ø RV11	
R-ch TP18		Ø RV3	



A = B = 700 mVp-p



Note: After this adjustment is completed, be sure to carry out STEP3-10, again.

After STEP3-10, STEP3-11 are completed, attach the PR-139 board and PR-140 board on the PR-138A board.

Equipment:

Oscilloscope To be extended: PR-138A board

Trigger:

CP(TP35/extension board)

Preparation

S2 (TEST)/VA-85 board

"OFF"

S3 (YON/OFF)/PR-138A board

"ON"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Close "C"

Test point:

mentioned below

Adjust point:

mentioned below

Specification:

mentioned below

Adjustment procedures

- 1. ORV25 (R FLR)/PR-138A board O RV26 (G FLR)/PR-138A board
 - → fully clockwise → fully clockwise
 - RV27 (B FLR)/PR-138A board
- → fully clockwise
- 2. Carry out, G-channel, R-channel and B-channel adjustment as shown below.

	(PANEL SIDE)
_	
3.	RV25 (R FLR)/PR-138A board→ fully counterclockwise
	RV26 (G FLR)/PR-138A board → fully counterclockwise
	RV27 (B FLR)/PR-138A board → fully counterclockwise
4.	Carry out, G-channel, R-channel and B-channel adjustment

RV25 (R FLR) RV27 (B FLR) RV26 (G FLR) RV2 (R FED) RV10 (B FED) RV33 (G PED)

000000

Ø RV10

Ø RV6

RV5

© TP3

CN1

S3 S

Ø RV4

Ø RV3

ØRV1

Ø RV9

PR-140 BOARD

PR-139 BOARD

© TP5

PR-138A/138B BOARD (COMPONENT SIDE)

⊚ TP1

₽øØ

©

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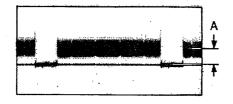
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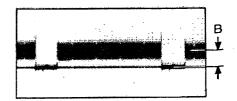
2º 🕗

as shown below.

	Test point/ extension board	Adjust point/ PR-138A board	Specification	
G-ch	TP17	⊘ RV33		
B-ch	TP16	⊘ RV10	$A = 50 \pm 5 \text{ mV}$	
R-ch	TP18	O RV2		

	Test point/ extension board	Adjust point/ PR-139 board	Specification
G-ch	TP17	O RV2	
B-ch	TP16	O RV3	$A = 50 \pm 5 \text{mV}$
R-ch	TP18	Ø RV1 .	





Note: After this adjustment is completed, set the switches as follow.

- · OUTPUT/DCC switch (side panel) · S4 (WHT CLIP)switch/PR-138A board
- "CAM/OFF"
 - "ON"
- · S3 (γ ON/OFF)switch/PR-138A board
- "OFF"
- · S2 (TEST)switch/VA-85 board
- "ON"

4-34

Equipment:

Vectorscope (MAX Gain)

To be extended: EN-69P board

Trigger: Preparation

OUTPUT/DCC switch (side panel) ENC/RGB switch (side panel)

"BARS/OFF"

"ENC"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Close "C"

Test point:

Vectorscope

Adjust point:

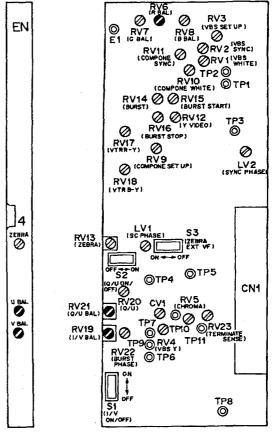
◆ RV21 (U BAL)/EN-69P board

Specification:

mentioned below

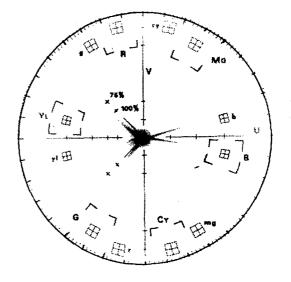
Adjustment procedurs

Adjust @ RV19 (V BAL) and @ RV21 (U BAL)/EN-69P board so as to center the black beam spot on the vectorscope.



EN-69P BOARD (PANEL SIDE)

EN-69/69P BOARD (COMPONENT SIDE)



Note: When black spots cannot be discriminated due to several beam spots, turn the ⊘RV6/EN-69P board. The black beam spots cannot be shifted. In this case, after adjustment is completed, perform STEP 3-19. Color-bar adjustment.

STEP 3-15. Black-set and Pedestal adjustment

Note: Be sure to reset the compensation data in the microprocessor, or this adjustment will become invalid. (See 4-1-3. Precaution on adjustments)

WHT SHAD BLK SHAD

Equipment:

Waveform monitor, Vectorscope (MAX Gain)

To be extended: VA-85 board

Trigger: Preparation

ENC/RGB switch (side panel)
G/OFF switch (side panel)

"RGB" "G"

R/OFF/B switch (side panel)

"OFF"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

"C"

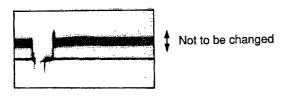
Test point: Adjust point: TEST OUT terminal mentioned below

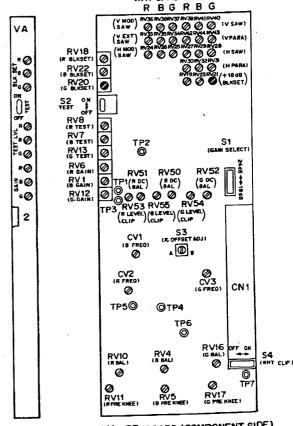
Specification:

mentioned below

Adjustment procedurs

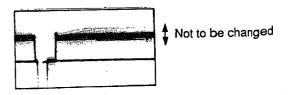
- Adjust the PEDESTAL control (side panel) so that the pedestal level is approx. 70 mV.
- Adjust the ■ RV20(G BLK SET)/VA-85 board so that the pedestal level does not change even if the GAIN selector is set to "0" or "9".



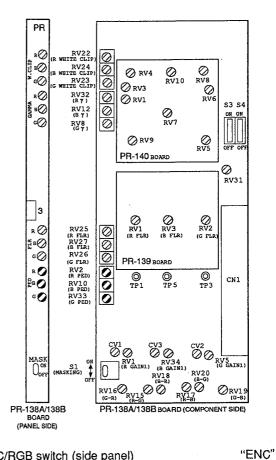


VA-85 BOARD (PANEL SIDE) VA-85 BOARD (COMPONENT SIDE)

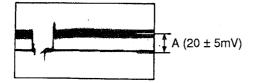
 Adjust the ②RV21(+18dB BLK SET)/VA-85 board so that the pedestal level does not change even if the GAIN selector is set to "0" or "18".



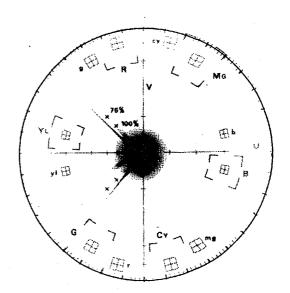
4. Set the PEDESTAL control (side panel) to "mechanical center"

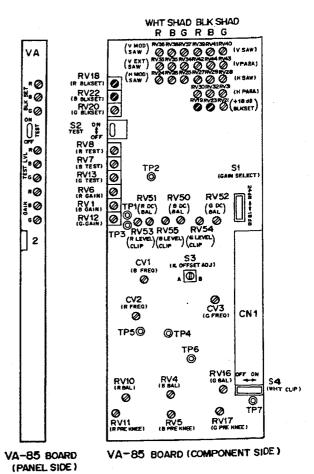


- 5. To be extended: PR-138A board
 - Adjust the RV33 (GPED)/PR-138A board so that the DC level "A" at TEST OUT terminal is 20±5 mVdc.

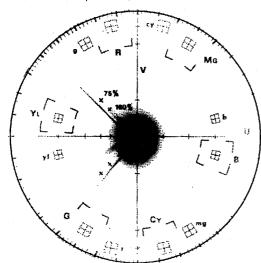


- 6. ENC/RGB switch (side panel)
- 7. Adjust the ORV2 and ORV10 on the PR-138A board so that the beam spot should be positioned in the center of the vectorscope screen.

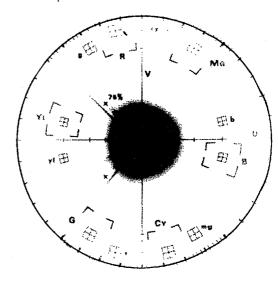




- 8. GAIN selector "9"
- 9. To be extended: VA-85 board
 - Adjust the ORV18 and ORV22 on the VA-85 board so that the beam spot should be positioned in the center of the vectorscope screen.



- 10. GAIN selector (side panel) "18"
- Adjust the RV19 and RV23 on the VA-85 board so that beam spot should be positioned in the center of the vectorscope screen.



12. Repeat item 7 to 11 so as to center the beam spot on the vectorscope, even if the GAIN selector (side panel) is set to "0","9" or "18".

Note: After this adjustment is completed, set the GAIN selector(side panel)to "0".

Note: Repeat carrying out this adjustment after STEP 3-15 Black set and Pedestal adjustment is carried out three or four times.

Equipment:

Waveform monitor(WFM)

To be extended: PR-138A board

Trigger:

Preparation

ENC/RGB switch (side panel)

"ENC"

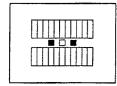
 RV26 (G FLR)/PR-138A board → fully counterclockwise As shown below, stick non-reflective and nonphoto conductive cloth (such as velvet)as a reference of the black level.

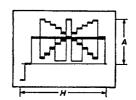
Object:

Gray scale chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the moni-

tor screen = chart frame

Lens iris:

 $A = 700 \pm 10 mV$.

Test point:

(at TEST OUT terminal)

TEST OUT terminal

Adjust point:

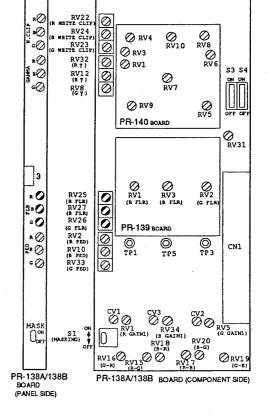
ORV25 (R FLR)/PR-138A board

ORV27 (B FLR)/PR-138A board

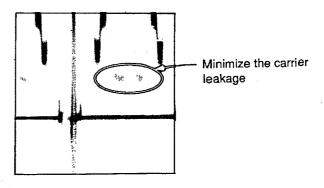
Specification: mentioned below

Adjustment procedures

1. Open the iris control 1 more than stop F value as stated above.



2. Adjust the ORV25 and ORV27 on the PR-138A board so that the carrier leakage of black level should be minimized.



Equipment: Waveform monitor(WFM)

To be extended:

Trigger: Preparation

ENC/RGB switch (side panel)

G/OFF switch (side panel)

R/OFF/B switch (side panel)

S2 (TEST)/VA-85 board

S4 (WHT CLIP)/PR-138A board

"RGB"

"G"

"OFF"

"OFF"

Object:

Test signal

Monitor screen

Waveform monitor

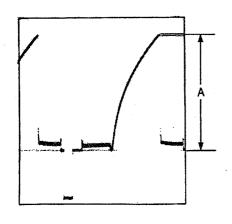
Lens Zoom:

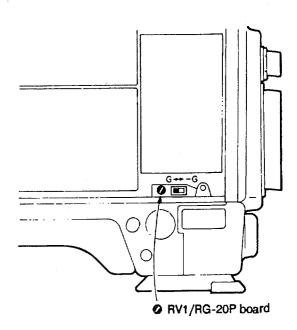
Lens iris:

Test point: TEST OUT terminal Adjust point: • RV1/RG-20 board

Specification: $A = 700 \pm 10 \text{mV}$

Adjustment procedurs





Note: After this adjustment is completed, set the S2 (TEST)/VA-85 board to "OFF" and S4 (WHT CLIP)/PR-138A board to "ON".

(VB5 S

TP2 O

⊚TP5

Ø Ø Ø Ø P7 ØTPI0 ØRV23 Ø ØTPI0 ØRV23

EN-69P BOARD (COMPONENT SIDE)

©TP6

RV14 Ø ØRV15
(BURST) ØRV12
LY VIDEO) T

RV17

RV18

RV13

RV21

RV19

ORV 1 (VBS

EV2

CN1

TP8

Note:

Equipment:

Waveform monitor

To be extended: EN-69P board

Trigger: Preparation

ENC/RGB switch (side panel) S2 (TEST)/VA-85 board "ENC"

"ON"

S4 (WHT CLIP)/PR-138A board

"OFF"

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TEST OUT terminal

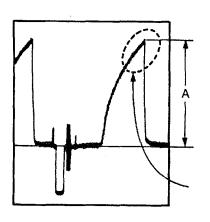
Adjust point:

Specification:

 $A = 700 \pm 10 \text{mV}$

Adjustment procedures

Adjust the RV4/EN-69P board repeatly so that the test signal level "A" is 700 ±10 mV.



Adjust © RV4 and © RV13/PR138A repeatedly so that the carrier leakage is minimum.

Note: After this adjustment is completed, set the switches as follow.

S2 (TEST)/VA-85 board

"OFF"

S4 (WHT CLIP)/PR-138A board

"ON"

• OUTPUT/DCC switch (side panel)

"ON"

Equipment:

Waveform monitor (WFM)

To be extended: EN-69P board

Trigger: Preparation

OUTPUT/DCC switch (side panel)

"BARS/OFF"

ENC/RGB switch (side panel)

"ENC"

Object:

Color-bar signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TEST OUT terminal

Adjust point:

RV7/EN-69P board

RV6/EN-69P boardRV8/EN-69P board

RV2/EN-69P board

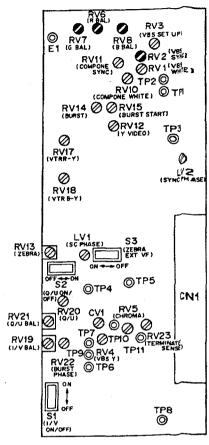
Specification:

 $A = 700 \pm 10 mV$

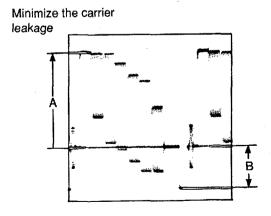
 $B = 300 \pm 10 mV$

Adjustment procedures

- Adjust the ♠ RV7, ♠ RV6 and ♠ RV8/EN-69P board so that the white level"A"at TEST OUT terminal is 700 ± 10mV and the carrier leakage is minimized.
- 2. Adjust the **⊘** RV2/EN-69P board so that the SYNC level "B" is 300 ± 10mV.



EN-69P BOARD (COMPONENT SIDE)



Equipment:

Vectorscope To be extended: EN-69P board

Trigger: Preparation

OUTPUT/DCC switch (side panel)

"BARS/OFF" "ON"

S1 (V)/EN-69P board S2 (U)/EN-69P board

"OFF"

Object:

Color-bar signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TEST OUT terminal

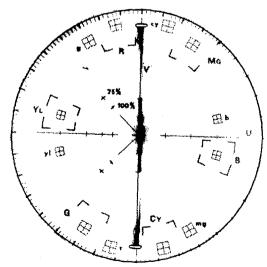
Adjust point:

RV20/EN-69P board

Specification:

Adjustment procedurs

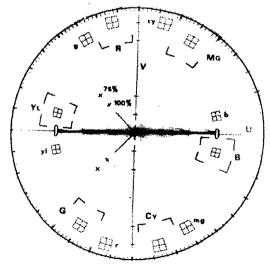
- 1. Adjust the PHASE control of the vectorscope so that the V signal is overlapped with V axis on the vectorscope
- 2. Adjust RV5/EN-69P board so that the beam spots at both ends of the V signal should be positioned on the specified point of the V axis.



3. S1 (V)/EN-69P board S2 (U)/EN-69P board

"OFF" "ON"

- 4. Adjust the PHASE control of the vectorscope so that the U signal is overlapped with the U axis on the vectorscope screen.
- 5. Adjust RV20/EN-69P board so that the beam spots at both ends of the U signal should be positioned on the specified point on the U axis.



Note:

BVP-70P(EK)



RV3 (VBS SET UP)

ORV2 STACE

ORV 1 (VBS

0

CN1

Ø TP2 @

RV14 Ø ØRVI5

RV17

0 RVIB

RV13

RV21

RV19

ORV12

@TP5

EN-69P BOARD (COMPONENT SIDE)

TP8

⊚TP4

RVIO OTPI

STEP 3-21. Burst adjustment

Note:

Equipment: Vectorscope **To be extended:** EN-69P board

Trigger: Preparation

OUTPUT/DCC switch (side panel)

"BARS/OFF" "ON"

S1 (V)/EN-69P board S2 (U)/EN-69P board

"ON"

Object:

Color-bar signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TEST OUT terminal

Adjust point:

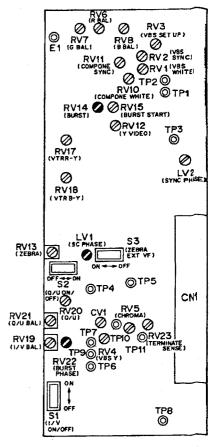
RV14(BURST)/EN-69P board

◇ LV1 (SC PHASE)/EN-69P board

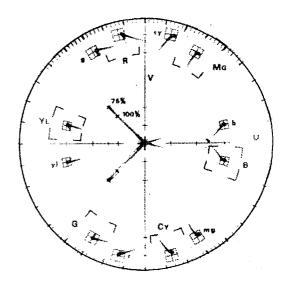
Specification:

Adjustment procedurs

- Adjust the PHASE control of the vectorscope so that the burst spot is overlapped with 75% scale on the vectorscope.
- Adjust the PHASE control of the vectorscope, ORV14 (BURST), ORV22 (BURST PHASE) and OLV1 (SC PHASE) /EN-69P board so that the beam spot of the burst signal is overlapped with the 75% scale on the vectorscope.



EN-69P BOARD (COMPONENT SIDE)



Equipment:

Oscilloscope, Waveform monitor

To be extended: EN-69P board

Trigger:

HD (TP34/extension board)

Preparation

OUTPUT/DCC switch (side panel)

"BARS/OFF"

Object:

Color-bar signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TP21/extension board

Adjust point:

RV12 (Y VIDEO)/EN-69P board

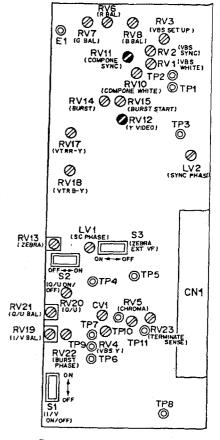
RV11 (COMPONE SYNC)/EN-69P board

Specification:

Y VIDEO = 700 ± 10 mV

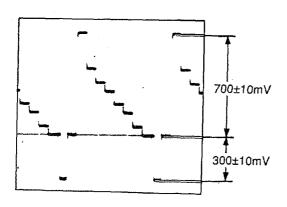
SYNC = 300 ± 10mV

Adjustment procedures



STEP 3. VIDEO SIGNAL SYSTEM

EN-69P BOARD (COMPONENT SIDE)



Note:

BVP-70P(EK)

STEP 3-23. VTR R-Y Gain adjustment

Note: Be sure to connect the CA-50P/3AP camera adaptor with the BVP-70P camera.

Equipment:

Oscilloscope To be extended: EN-69P board

Trigger:

HD(TP34/extension board)

Preparation

OUTPUT/DCC switch (side panel)

"BARS/OFF"

Object:

Color-bar signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

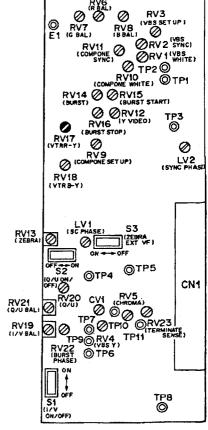
Test point: Adjust point:

TP19/extension board O RV17/EN-69P board

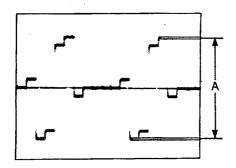
Specification:

 $A = 525 \pm 5mV$

Adjustment procedurs



EN-69/69P BOARD (COMPONENT SIDE)



STEP 3-24. VTR B-Y Gain adjustment

Note: Be sure to connect the CA-50P/3AP camera adaptor with the BVP-70P camera.

Equipment:

Oscilloscope

To be extended: EN-69P board

Trigger:

HD(TP34/extension board)

Preparation

OUTPUT/DCC switch (side panel)

"BARS/OFF"

Object:

Color-bar signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

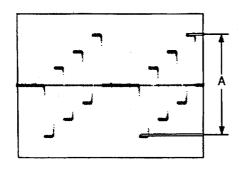
Test point:

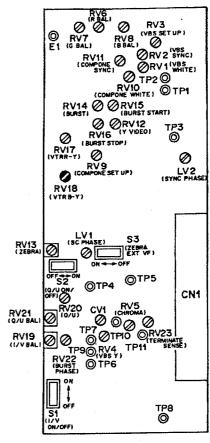
TP18/extension board

Adjust point:

Specification: 525 ± 5mV

Adjustment procedurs





EN-69/69P BOARD (COMPONENT SIDE)

Equipment:

Waveform monitor (WFM)

To be extended: EN-69P board

Trigger:

HD(TP34/extension board)

Preparation

ENC/RGB switch (side panel)

"ENC"

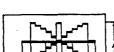
TALLY/ZEBRA ON/OFF switch (viewfinder)

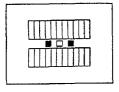
"ZEBRA"

Object:

Grayscale chart

Monitor screen





Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

A = 700 ± 10mV (at TEST OUT terminal)

Test point:

Viewfinder

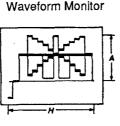
Adjust point:

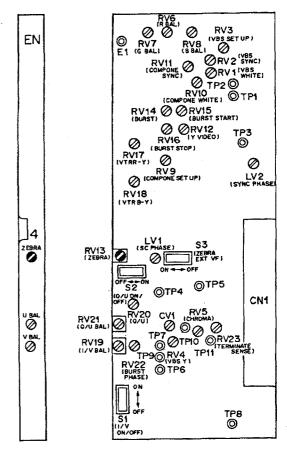
RV13/EN-69P board

Specification:

Adjustment procedurs

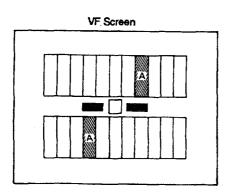
Adjust the RV13 (ZEBRA)/EN-69P board so that the striped pattern appears in the portion A of the VF screen as shown below.





EN-69P BOARD (PANEL SIDE)

EN-69/69P BOARD (COMPONENT SIDE)



Waveform monitor Equipment: To be extended: PR-138A board

Trigger: CP (TP35/extension board)

Preparation

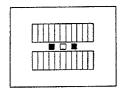
"RGB" ENC/RGB switch (side panel) "G" G/OFF switch (side panel) "OFF" R/OFF/B switch (side panel) "OFF" S4 (WHT CLIP)/PR-138A board "ON" S3 (y ON/OFF)/PR-138A board

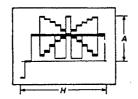
Object:

Grayscale chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

 $A = 700 \pm 10 \text{mV}$ (at TEST OUT terminal)

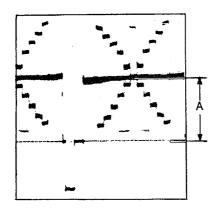
Test point: Adjust point: **TEST OUT terminal** mentioned below

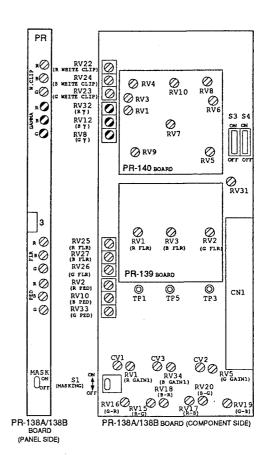
Specification:

mentioned below

Adjustment procedures

 Adjust the PRV8 (Gγ)/PR-138A board so that the cross point "A" at gray scale is 420 ± 20mV.

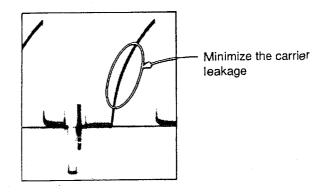




2. ENC/RGB switch (side panel) S2 (TEST)/VA-85 board

"ENC" "ON"

3. Adjust the ORV12 and ORV32/PR-138A board to minimize the carrier leakage.



STEP 3-27. Manual Knee and white clip adjustment

Note:

Equipment:

Waveform monitor (WFM)

To be extended: PR-138A board

Trigger:

CP (TP35/extension board)

Preparation

Object:

Test signal

Monitor screen

Waveform monitor

ENC/RGB switch (side panel)	"MGB"
GAIN switch (side panel)	"9"
OUTPUT/DCC switch (side pane	i) "CAM/DEF"
G/OFF switch (side panel)	*'G"
R/OFF/B switch (side panel)	"OFF"
S2 (TEST) switch/VA-85 board	"Ои"
S3 (y ON/OFF)/PR-138A board	"ОN"
S4 (WHT CLIP)/PR-138A board	"ОN"
	→ mechanical © nter
RV3/PR-140 board	→ mechanical center
RV4/PR-140 board	→ fully clockwise
	→ fully clockwise
 RV10/PR-140 board 	→ fully clockwise
RV22/PR-138A board	→ fully counterclockwise
 RV23/PR-138A board 	→ fully counterclockwise
	→ fully counterclockwise

(QCD"

Lens Zoom:

Lens iris:

Test point: Adjust point: mentioned below mentioned below

Specification:

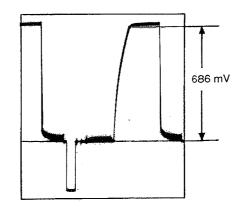
mentioned below

Adjustment procedures

The adjustment values mentioned in STEP "3-29. Manual Knee and white clip adjustment" apply for the white clip level set to 770 mV. If you want to operate with a white clip level other than 770 mV, adjust the KNEE POINT, KNEE SLOPE, and WHITE CLIP LEVEL following the list below.

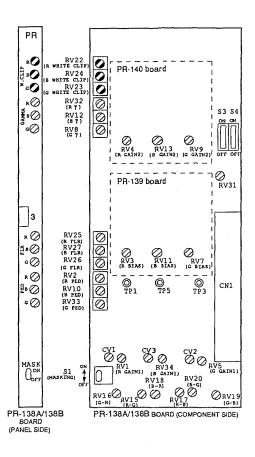
White clip level Measuring point	770mV	750mV	735mV	720mV
MANUAL KNEE POINT RV9/PR-140	686mV	686mV	672mV	672mV
KNEE SLOPE • RV8/PR-140	777mV	770mV	749mV	749mV
WHITE CLIP • RV23/PR-138A	770mV	749mV	735mV	721mV

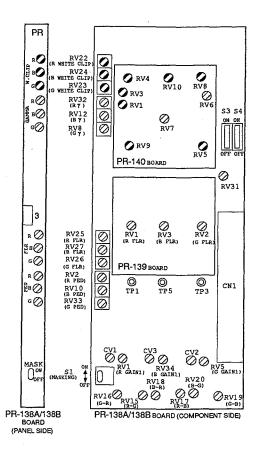
1. Adjust RV9 (MANU POINT)/PR-140 board so that the knee point level at TEST OUT terminal is 686 ± 10 mV.



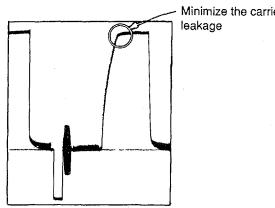
2. ENC/RGB switch (side panel) "ENC"

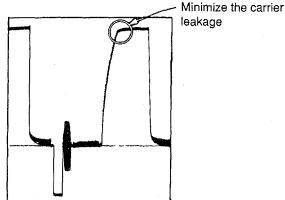
Note: Specifications of the STEP 3-27 is that for the white clip level set to 770 mV. When using the unit at other white clip level, change the knee point, knee slope, and white clip level, and perform adjustment, as shown below.





- 3. Adjust RV1 (R POINT) AND RV3 (B POINT)/PR-140 board so that the carrier leakage at the knee point of the TEST SAW waveform is minimized.
- 5. Adjust ORV8 (G SLOPE)/PR-140 board so that the peak level of the TEST SAW waveform is 777 ± 10 mV.





4. ENC/RGB switch (side panel) G/OFF switch(side panel)

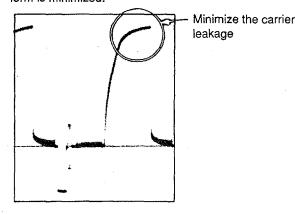


0.777±0.01V.

6. ENC/RGB switch (side panel)

"ENC"

7. Adjust ORV4 (R SLOPE) and ORV10 (B SLOPE)/PR-140 board so that the carrier leakage of the TEST SAW waveform is minimized.



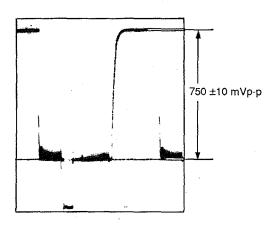
8. ENC/RGB switch (side panel) G/OFF switch (side panel) GAIN switch (side panel)

"RGB"

"18"

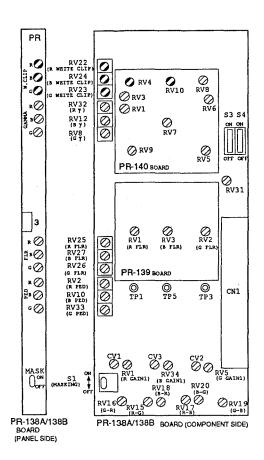
"G"

Adjust ◆ RV23 (G WHT CLIP)/PR-138A board so that the TEST SAW waveform clips at 750 ± 10mV.

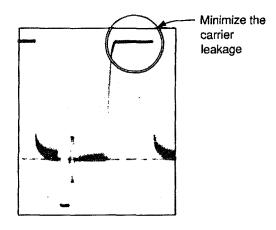


10. ENC/RGB switch (side panel)

"ENC"



11. Adjust ORV22 (RWHT CLIP) and ORV24 (BWHT CLIP)/ PR-138A board so that the carrier leakage of the TEST SAW waveform is minimized.



STEP 3-28. Automatic Knee adjustment

Note: Be sure to complete the STEP 3-27. Manual knee and White Clip adjustment.

Equipment:

Oscilloscope(DC mode), Waveform monitor

To be extended: PR-138A board

Trigger:

CP(TP35/extension board)

Preparation

ENC/RGB switch (side panel)

"ENC"

GAIN switch (side panel)

"0"

OUTPUT/DCC switch (side panel)

"CAM/OFF"

S2(TEST) switch/VA-85 board

"ON"

S3 (y ON/OFF)/PR-138A board

"ON"

S4 (WHT CLIP)/PR-138A board

"ON"

RV7 (AUTO LIMIT)/PR-140 board → mechanical center

RV6 (AUTO GAIN)/PR-140 board

→ fully counterclockw ise

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point: Adjust point:

mentioned below mentioned below

Specification:

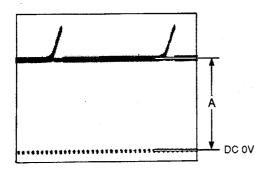
mentioned below

Adjustment procedures

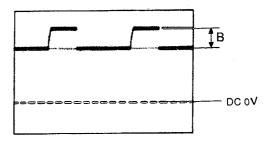
1. GAIN switch (side panel)

"18"

2. Adjust @ RV5/PR-140 board so that the DC level "A" at TP1/PR-140 board is 0.3 ± 0.05 Vdc.

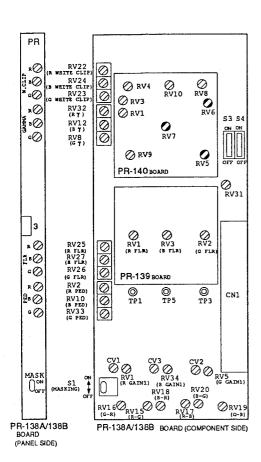


3. Adjust ORV7/PR-140 board so that the waveform level "B" at TP2/PR-140 board is 0.35 ± 0.05 Vdc.

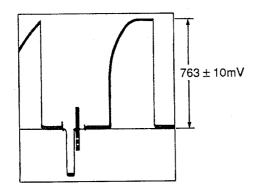


4. OUTPUT/DCC switch (side panel) GAIN switch (side panel)

"ON" "18"

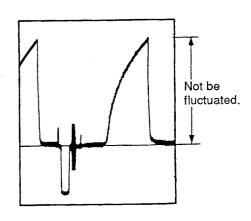


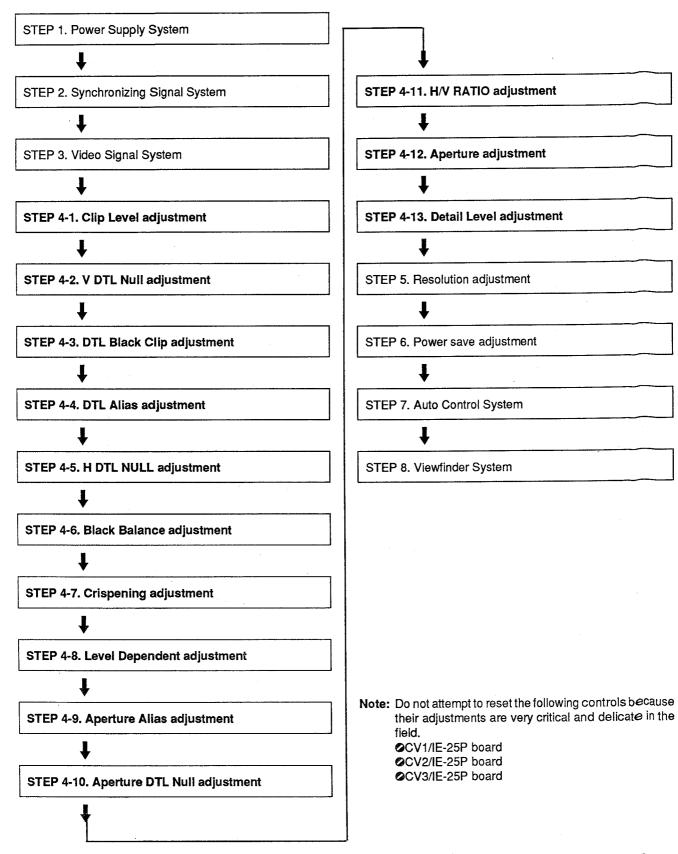
5. Adjust ORV6/PR-140 board so that the peak level of TEST SAW waveform is 763 ± 10 mV.



6. • GAIN switch (side panel)

 Adjust ORV5/PR-140 board so that the peak level of waveform does not change even if that DCC switch is set any position of ON or OFF.





Equipment: Oscilloscope To be extended: IE-25P board

Trigger:

TP10/extension board

Preparation

Object:

ENC/RGB switch(side panel) GAIN switch(side panel) S1(DTL)/IE-25P board S2(APEARTURE)/IE-25P board

White window chart

Monitor screen

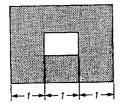
Waveform monitor

"ENC"

"9"

"ON"

"OFF"



Lens Zoom:

Shoot the white window chart as stated

above.

Lens iris:

Open

Test point: Adjust point:

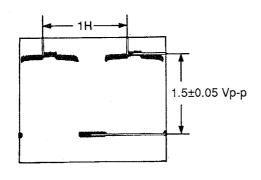
TP6/extension board ØRV1(CLIP LEV)/IE-25P

Specification:

1.5 ± 0.05 Vp-p

Adjustment procedures

Open the lens iris slowly and adjust ORV1 (CLIP LEV)/IE-25P board so that the waveform at TP6/extension board clips at 1.5 ± 0.05 Vp-p.



RV10 (DTLCLIP) ΙE 0 TP6 RV5 (DTL LEV) RV4 (CRISPENING) 0 Ø Ø RV9 (DTL BLK) O (APT) эг О Ø EVDE Ø RV16 (HDTL (LSVEL (DEPEND) RV7 (H/V RATIO) TP4 Ø H∕V RATЮ Ø CV4 Ø CN1 RV2 (DTL ALAS) 1 Ø RV6 (DTL NUL ØØ^{CV1}
RV1
(MODE WHT CLIP) CV2 Ø UHLE

IE-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)

Note: After this adjustment is completed, set the GAIN selector (side panel) to "0".

Equipment:

Oscilloscope, Waveform monitor

To be extended: IE-25P board

Trigger:

TP35/extension board

Preparation

ENC/RGB switch(side panel)

"ENC"

S1(DTL)/IE-25P board

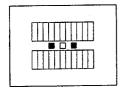
"ON"

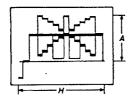
Object:

Gray scale chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame

on the monitor = chart frame

Lens iris:

 $A = 700 \pm 10 mV$

(at TEST OUT terminal) TP5/IE-25P board

Test point: Adjust point:

⊘RV6/IE-25P board

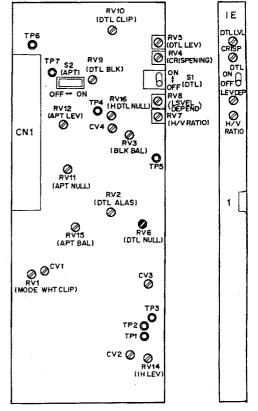
Specification:

mentioned below

Adjustment procedures

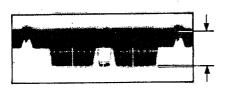
Adjust the ORV6/IE-25P board so that the video level is

"Zero" as shown below.

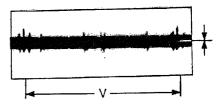


IE-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)







Oscilloscope, waveform monitor

To be extended: IE-25P board

Trigger:

TP35/extension board

Preparation

ENC/RGB switch(side panel)

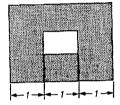
"ENC"

Object:

White window chart

Monitor screen

Waveform monitor



Lens Zoom:

Shoot the white window chart as stated

above.

Lens iris:

Open

Test point:

TP5(GND:E1)/IE-25P board

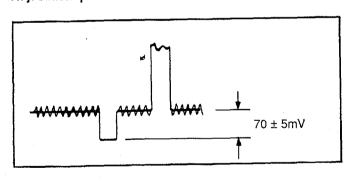
Adjust point:

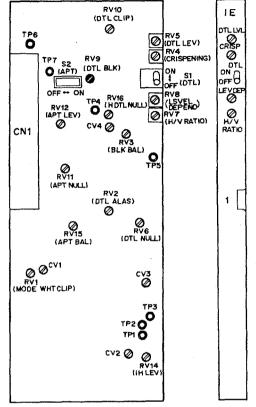
⊘RV9/IE-25P board

Specification:

mentioned below

Adjustment procedures





IE-25/25P BOARD (COMPONENT SIDE)

(PANEL SIDE)

Equipment:

Waveform monitor

To be extended: IE-25P board

Trigger: Preparation

ENC/RGB switch (side panel) S1 (DTL ON/OFF) switch/IE-25P board "ENC"

S1 (DTL ON/OFF) switch/IE-25P board S2 (APERTURE) switch/IE-25P board

"ON" "OFF"

RV5 (DTL)/IE-25P board → fully clockwise

RV7 (H/V RATIO)/IE-25 board → fully clockwise

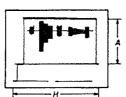
Object:

Multiburst chart

, Monitor screen



Waveform monitor



Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

 $A = 630 \pm 10 \text{ mV}$ (at TEST OUT terminal)

Test point:

TEST OUT terminal

Adjust point:

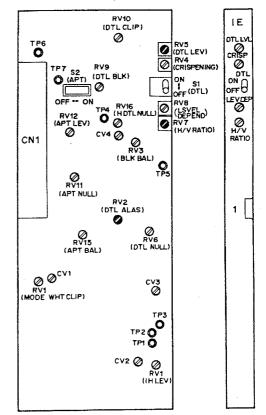
⊘RV2/IE-25P board

Specification:

mentioned below

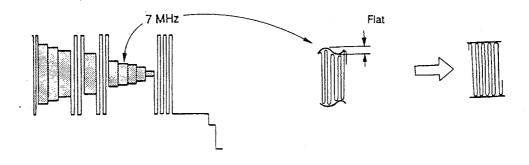
Adjustment procedures

- 1. Pan so that the 7 MHz of the multiburst chart is positioned at center on the monitor screen.
- 2. Adjust the **2** RV2/IE-25P board so that the waveform signal of 7 MHz is flat.



IE-25/25P BOARD (COMPONENT SIDE)

(PANEL SIDE)



ΙE

Note:

Oscilloscope, Waveform monitor **Equipment:**

To be extended: IE-25P board

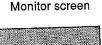
TP10/extension board Trigger:

Preparation

"ENC" ENC/RGB switch(side panel) "ON" S1(DTL)/IE-25P board "OFF" S2(APEARTURE)/IE-25P board

Object:

White window chart



Waveform monitor

Lens Zoom:

Shoot the white window chart as stated

above.

Lens iris:

 $A = 700 \pm 10 mV$

(at TEST OUT terminal)

Test point:

TP4(GND:E1)/IE-25P board

Adjust point:

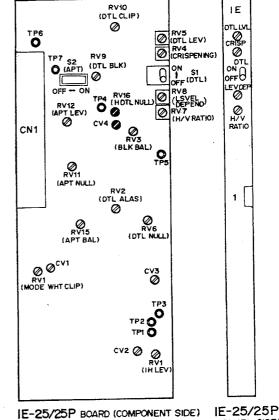
ORV16/IE-25P board

⊘CV4/IE-25P board

mentioned below Specification:

Adjustment procedures

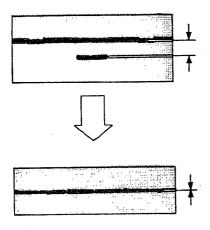
1. Adjust the ORV16/IE-25P board so that the white signal is level as shown below.

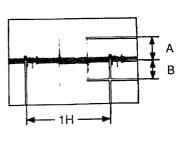


(PANEL SIDE)

Adjust the OCV4/IE-25P board so that the detail signal is

the level as shown below.





A = B

Equipment:

Oscilloscope, Waveform monitor

To be extended: IE-25P board

Trigger:

TP10/extension board

Preparation

S1(DTL ON/OFF)/IE-25P board S2(APEARTURE)/IE-25P board

"ON" "OFF" ⊘RV5(DTL)/IE-25P board ORV4(CRISP)/IE-25P board \rightarrow fully clockwise

→ fully counterclockwise

ORV8(LEV DEP)/IE-25P board

→ fully counterclockwise

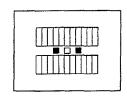
ORV7(H/V RATIO)/IE-25P board

→ mechanical center

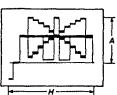
Object:

Grayscale chart

Monitor screen



Waveform monitor



Lens Zoom:

Underscanned picture frame

on the monitor = chart frame

Lens iris:

 $A = 700 \pm 10 mV$ (at TEST OUT terminal)

Test point:

TP6(GND:E1)/IE-25P board

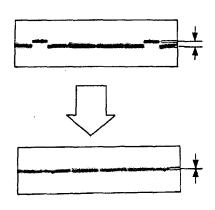
Adjust point:

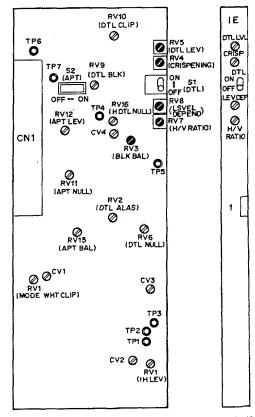
◆RV3/IE-25P board

Specification:

mentioned below

Adjustment procedures





1E-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)

Equipment:

Waveform monitor

To be extended: IE-25P board

Trigger: Preparation

S1(DTL ON/OFF) switch/IE-25P board

"ON"

RV8 (LEV DEP)/IE-25P board → fully counterclock wise

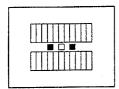
RV7 (H/V RATIO)/IE-25P board→ fully counterclock wise

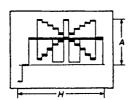
Object:

Grayscale chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the

monitor = chart frame

Lens iris:

 $A = 686 \pm 10 \text{ mV}$

Test point:

(at TEST OUT terminal) **TEST OUT terminal**

⊘RV4/IE-25P board

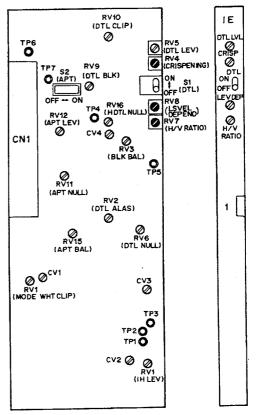
Adjust point:

Specification:

mentioned below

Adjustment procedures

Adjust the RV4 (CLISP)/IE-25P board for such a position that noise of the output waveform on the waveform monitor starts to be reduced.



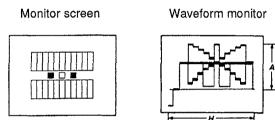
IE-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)

Waveform monitor(WFM) **Equipment:** To be extended:

Trigger:

Preparation		
S1(DTL ON/OFF)/IE-25P board		"ON"
S2(APEARTURE)/IE-25P board		"OFF"
ENC/RGB switch(side panel)		"RGB"
G/OFF switch(side panel)		"G'
R/OFF/B switch(side panel)		"OFF"
Object:	Grayscale chart	



Lens Zoom:

Underscanned picture frame on the

monitor = chart frame

Lens iris:

 $A = 700 \pm 10 mV$

Test point:

(at TEST OUT terminal) TEST OUT terminal

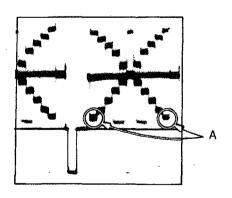
Adjust point:

◆RV8(LEV DEP)/IE-25P board

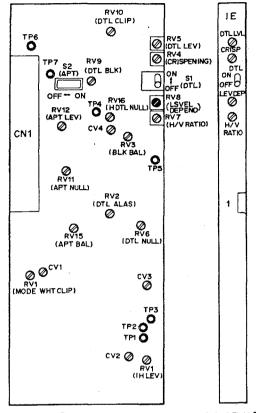
Specification: mentioned below

Adjustment procedures

The detail signal is not added to the portion "A" of the waveform at TEST OUT terminal.



Note:



IE-25/25P BOARD (COMPONENT SIDE) IE-25/25P (PANEL SIDE)

Equipment:

Waveform monitor

To be extended: IE-25P board

Trigger: Preparation

ENC/RGB switch (side panel) S1 (DTL ON/OFF)/IE-25P board S2 (APEARTURE)/IE-25P board "ENC" "OFF" "ON"

ORV11 (APERTURE NULL)/IE-25P board

→ fully clockwise

ORV7 (H/V RATIO)/IE-25 board → fully clockwise

Object:

Multiburst chart

Monitor screen

Waveform monitor



Lens Zoom:

Underscanned picture frame on the

monitor = chart frame

Lens iris:

 $A = 630 \pm 10 \text{mV}$ (at TEST OUT terminal)

Test point:

TEST OUT terminal

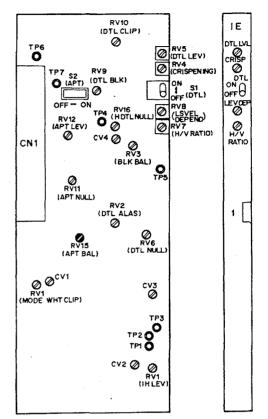
Adjust point:

ORV15/IE-25P board

Specification: mentioned below

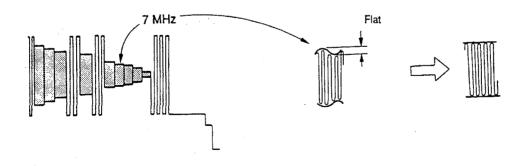
Adjustment procedures

- 1. Pan so that the 7MHz of the multi-burst chart is positioned at center on the monitor screen.
- 2. Adjust the PV15/IE-25P board so that the waveform signal of 7 MHz is flat.



IE-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)



Note:

Equipment: Oscilloscope To be extended: IE-25P board

Trigger:

TP10/extension board

Preparation:

S2(TEST)/VA-85 board S1(DTL ON/OFF)/IE-25P board S2(APEARTURE)/IE-25P board "ON"

"OFF" "ON"

Object:

Test signal

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TP7(GND:E1)/IE-25P board

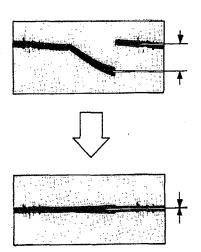
Adjust point:

ORV11/IE-25P board

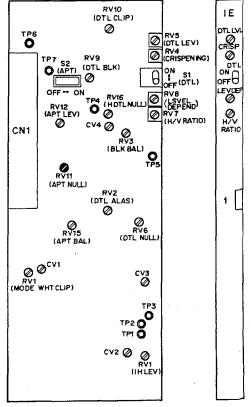
Specification:

mentioned below

Adjustment procedures



Note:



IE-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)

Equipment:

Monitor screen

To be extended:

Trigger:

Preparation S1(DTL ON/OFF)/IE-25P board S2(APEARTURE)/IE-25P board

ØRV5(DTL)/IE-25P board

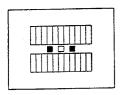
"ON" "OFF"

"fully clockwise"

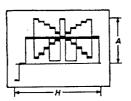
Object:

Grayscale chart

Monitor screen



Waveform monitor



Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

 $A = 700 \pm 10 mV$ (at TEST OUT terminal)

Test point:

TEST OUT terminal

Adjust point:

ORV7(H/V RATIO)/IE-25P board

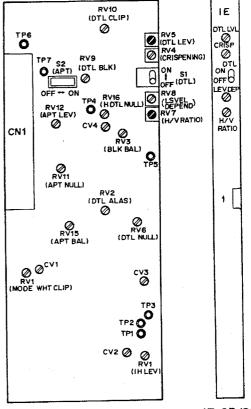
Specification:

mentioned below

Adjustment procedures

Adjust ORV7(H/V RATIO)/IE-25P board so that the H and V detail amounts to be added are equivalent.

Monitor screen



IE-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)

Equipment:

Waveform monitor(WFM)

To be extended: IE-25P board

Trigger:

Preparation

S1(DTL ON/OFF)/IE-25P board S2(APEARTURE)/IE-25P board "OFF" "ON"

Object:

Multiburst chart

Monitor screen

Waveform monitor



Lens Zoom:

Underscanned picture frame

on the monitor = chart frame

Lens iris:

 $A = 630 \pm 10 \text{mV}$

(at TEST OUT terminal)

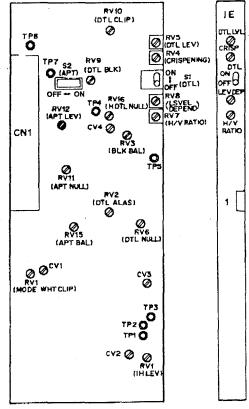
Test point: Adjust point:

TEST OUT terminal

Specification:

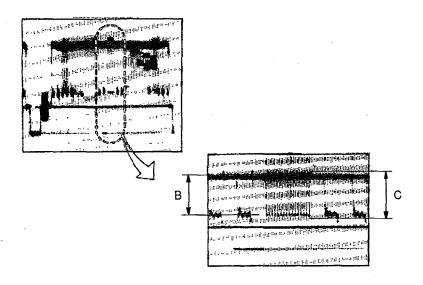
B=C (B:Referance Value)

Adjustment procedures



1E-25/25P BOARD (COMPONENT SIDE)

IE-25/25P (PANEL SIDE)



Equipment:

Monitor screen

To be extended:

Trigger: Preparation

S1(DTL ON/OFF)/IE-25P board S2(APEARTURE)/IE-25P board

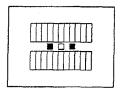
"ON" "OFF"

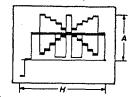
Object:

Grayscale chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

 $A = 560 \pm 10 \text{mV}$

Test point:

(at TEST OUT terminal)

rest politi.

TEST OUT terminal

Adjust point:

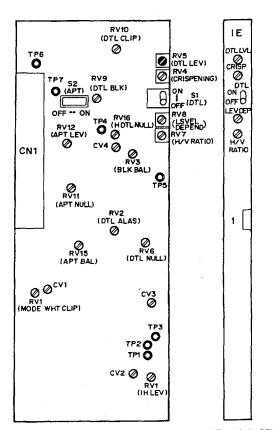
ORV5(DTL)/IE-25P board

Specification:

mentioned below

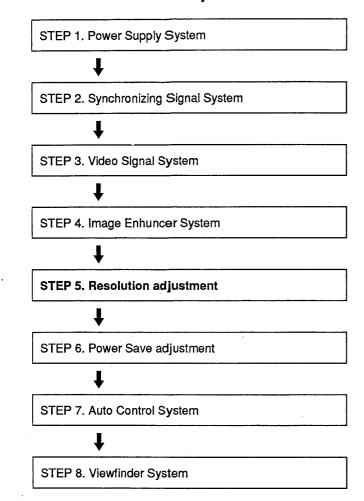
Adjustment procedures

Set the detail level according to the users' requist by adjusting PV5(DTL)/IE-25P board.



IE-25/25P BOARD (COMPONENT SIDE) IE-25/25P (PANEL SIDE)

STEP 5. Resolution adjustment



Equipment: Monitor screen To be extended: VA-85 board

Trigger: Preparation

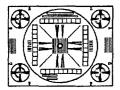
S1(DTL ON/OFF)/IE-25P board "OFF" ENC/RGB switch(side panel) "RGB" "OFF" G/OFF switch(side panel) "R" R/OFF/B switch(side panel) S1(G/-G)/RG-20P board "-G"

Object:

Resolution chart

Monitor screen

Waveform monitor



Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

 $A = 700 \pm 10 mV$

(at TEST OUT terminal)

Test point:

TEST OUT terminal

Adjust point: S3(π OFFSET)/VA-85 board

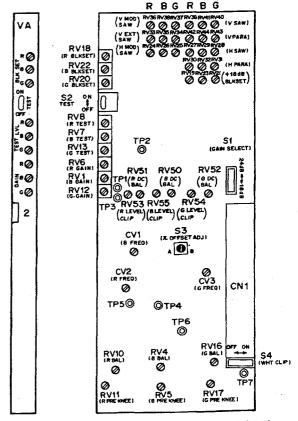
Specification: more than 700 TV lines

Adjustment procedures

- 1. Adjust OS3(π OFFSET)/VA-85 board so that the picture error of R-ch and G-ch is minimized.
- 2. ENC/RGB switch(side panel) "ENC" S1(DTL)/IE-25P board

Object:

Resolution chart

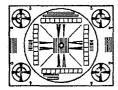


WHT SHAD BLK SHAD

VA-85 BOARD (PANEL SIDE)

VA-85 BOARD (COMPONENT SIDE)

- 3. Adjust the zoom control so that the resolution chart frame touches the underscanned picture frame on the monitor screen.
- 4. Make sure that the resolution of more than 700 TV lines can be seen on the monitor screen.



Note: After this adjustment is completed, set the switches as follows;

ENC/RGB switch(side panel)

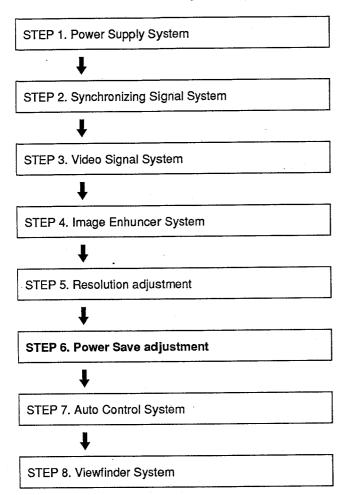
"ENC"

S1(G/-G)/RG-20P board

"G"

"ON"

STEP 6. Power Save adjustment



Equipment:

Digital Voltmeter

To be extended: EN-69P board

Trigger: Preparation

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TP11(GND:E1)/EN-69P board

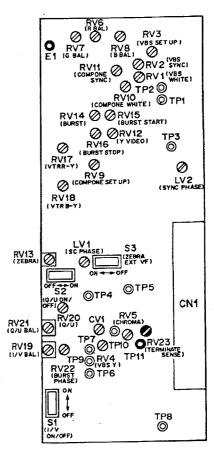
Adjust point:

ORV23/EN-69P board

Specification:

-0.45±0.1Vdc

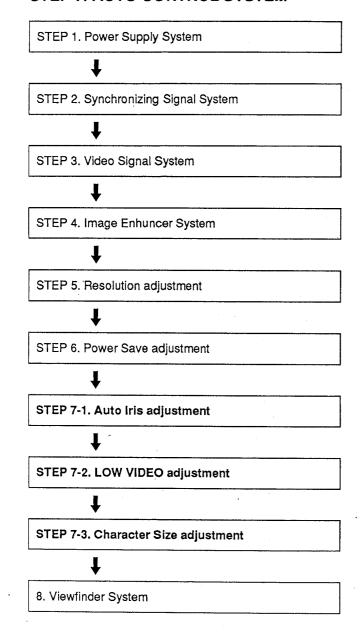
Adjustment procedurs



EN-69/69P BOARD (COMPONENT SIDE)

Note: Confirm that the waveform at TP8/extension board is fed when the ENC/RGB selector(side panel) is set to "ENC" and it is not fed when the selector is set to "RGB".

STEP 7. AUTO CONTROL SYSTEM



STEP 7-1. Auto Iris adjustment

Note:

Equipment:

Waveform monitor(WFM)

To be extended:

Trigger: Preparation

ENC/RGB switch(side panel)
Iris AUTO/MANU switch(Lens)
OUTPUT/DCC switch(side panel)

"ENC"
"AUTO"

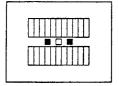
"CAM/ON"

Object:

Grauscale chart

Monitor screen

Waveform monitor



Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

Test point:

TEST OUT terminal

Adjust point:

♥ RV5(IRIS SET)/PS-224 board

RV4(IRIS MODE)/PS-224 board

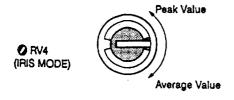
Specification:

Adjustment procedures

 The iris control operation is controlled by mixing the peak level of the video signal with the average of it. That mixing ratio can be set by adjusting PRV4(IRIS MODE)/PS-224 board.

Set the mode according to the users'requist.

Normally set it at the center.



 Adjust ○ RV5(IRIS SET)/PS-224 board so that the white level at TEST OUT terminal is 700 ± 10 mV.

PS-224 BOARD

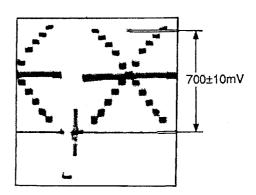
(PANEL SIDE)

PS

IRIS SET

IRIS

5



Note: After this adjustment is completed, set the iris control AUTO/MANU switch(Lens) at "MANU" and OUTPUT/DCC switch(side panel) at "CAM/OFF"

STEP 7-2. LOW VIDEO adjustment

Note:

Equipment:

Viewfinder screen

To be extended:

Trigger: Preparation

ENC/RGB switch(side panel)

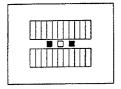
"ENC"

Object:

Grauscale chart

Monitor screen

Waveform monitor



Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

Mentioned below

Test point:

TEST OUT terminal

Adjust point:

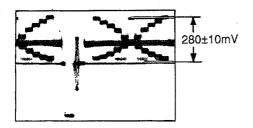


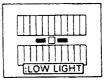
Adjustment procedures

- 1. Adjust the iris control so that the wihte level at TEST OUT terminal is $280 \pm 10 \text{mV}$.
- Turn ORV2(LOW VIDEO)/AT-58 board from the left most position clockwise slowly until the "LOW LIGHT" is displayed on the VF screen.

0

AT-58 BOARD (COMPONENT SIDE)





STFP 7 ALITO CONTROL SYSTEM

Ø RV2

AT-58 BOARD (COMPONENT SIDE)

Note:

Equipment:

Viewfinder screen

To be extended:

Trigger: Preparation

ENC/RGB switch(side panel) OUTPUT/DCC switch(side panel)

"ENC" "CAM/OFF"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Close "C"

Test point:

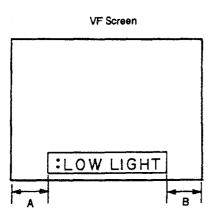
TEST OUT terminal

Adjust point:

ORV1(CHR SIZE)/AT-58 board

Specification: A = B

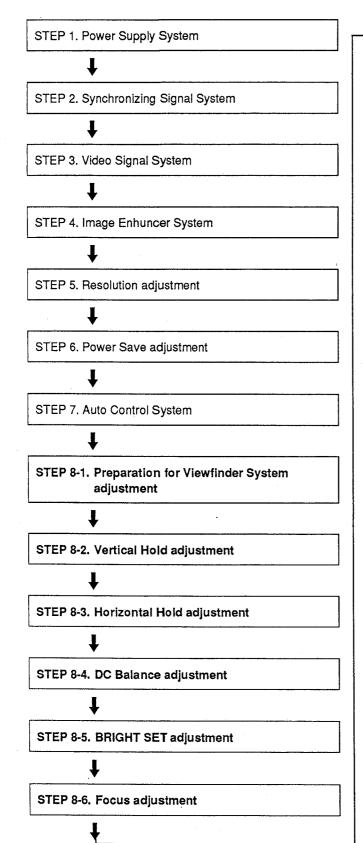
Adjustment procedurs

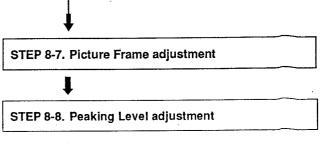


Note:

BVP-70P(EK)

STEP 8. VIEWFINDER SYSTEM



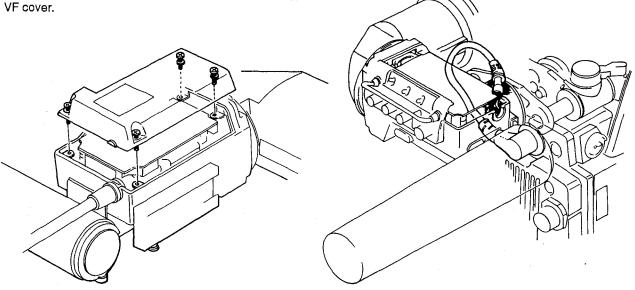


STEP 8-1. Preparation for Viewfinder System adjustment

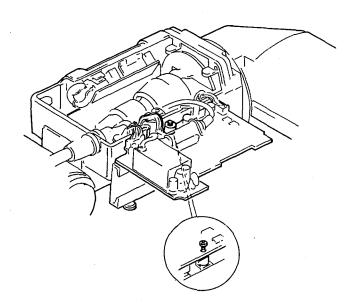
Note: Be sure to adjust the camera completely, or the following adjustments will become invalid.

Preparation

- Set the power of AC adaptor(AC-500CE or CMA-8CE) to "OFF".
- 2. Remove the viewfinder from the camera and remove the
- 4. Turn the component side of VF-41 board up wards for adjustments as shown below.



- 3. Install the viewfinder to be turned upside shown on the camera.
- 5. Set the power switch of AC adaptor(AC-500CE or CMA-8CE) to "ON".



Equipment:

Oscilloscope

To be extended:

Trigger:

Preparation

- 1. Pull the EN-69P board out of the camera.
- 2. Set ⊘RV4(V SIZE)/VF-41 board to the mechanical center unless it is marked.

Object:

Monitor screen

Waveform monitor

Lens Zoom:

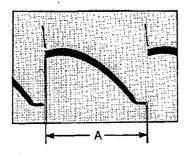
Lens iris:

Test point: Adjust point: TP3(GND:E1)/VF-41 board ORV5(V HOLD)/VF-41 board

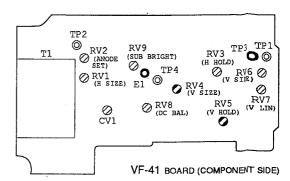
Specification:

 $A = 25.6 \pm 0.5$ msec

Adjustment procedures



Note: After this adjustment is completed, insert the EN-69P board into the camera.



STEP 8-3. Horizontal Hold adjustment

Note:

Equipment:

Oscilloscope, Waveform monitor (WFM)

To be extended:

Trigger:

CH2/oscilloscope

Preparation

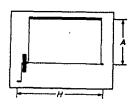
Object:

White window chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

 $A = 700 \pm 10 mV$ (at TEST OUT terminal)

Test point:

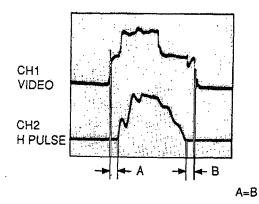
CH1 TP2(GND:E1)/VF-41 board CH2 TP1(GND:E1)/VF-41 board

Adjust point:

ORV3(H HOLD)/VF-41 board

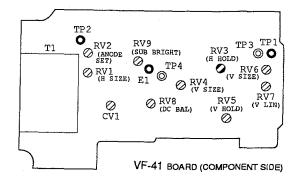
Specification:

Adjustment procedures



Note:

BVP-70P(EK)



STEP 8-4. DC Balance adjustment

Note:

Equipment:

Oscilloscope

To be extended:

Trigger:

Preparation
CAM/BARS switch(camera side)"BARS"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

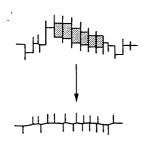
TP4(GND:E1)/VF-41 board

Adjust point:

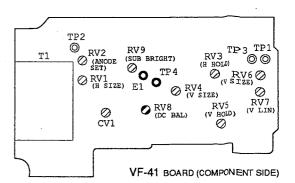
ORV8(DC BALANCE)/VF-41 board

Specification: mentioned below

Adjustment procedures



Only spike noises should appear at TP4.



STEP 8-5. BRIGHT SET adjustment

Note:

Equipment:

Viewfinder screen

To be extended:

Trigger:

Preparation

OUTPUT/DCC switch(camera side)"BARS/OFF"
BRIGHT control(viewfinder) "fully clockwise"
CONTRAST control(viewfinder) "fully clockwise"

Object:

Monitor screen

Waveform monitor

Lens Zoom:

Lens iris:

Test point:

TEST OUT terminal

Adjust point:

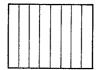
ØRV9(BRIGHT SET)/VF-41 board

Specification: mentioned below

Adjustment procedures

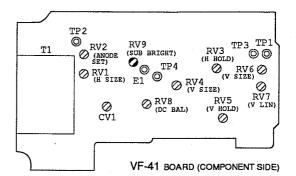
Adjust so that the darkest color-bar signal portion is light slightly.

aignuy.



Note:

BVP-70P(EK)



STEP 8-6. Focus adjustment

Note: STEP 8-7.Picture Frame adjustment and this adjustment affect each other. Repeat these adjustments until both specifications are satisfied.

Equipment:

Viewfinder screen

To be extended:

Trigger: Preparation

BRIGHT control(viewfinder)
CONTRAST control(viewfinder)

"mechanical center"

"fully clockwise"

PEAKING control(viewfinder)

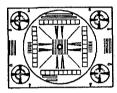
"fully counterclockwise"

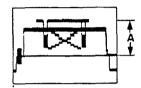
Object:

Resolution chart

Monitor screen

Waveform monitor





Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

A = 700 ± 10mV (at TEST OUT terminal)

Test point:

TEST OUT terminal

Adjust point:

ORV2(FOCUS)/VF-41 board

Specification:

mentioned below

Adjustment procedures

Turn ORV2(FOCUS)/VF-41 board from the leftmost position clockwise slowly until the picture on the viewfinder is best focused.

(Note: turn slowly.)

TP2

ORV2
(ANODE (SUB BRIGHT)
SET)
ORV1
(H SIZE)
ORV3
(V SIZE)
ORV4
(V SIZE)
ORV5
(V SIZE)
ORV5
(V HOLD)

VF-41 BOARD (COMPONENT SIDE)

Note: After this adjustment is completed, confirm that a focus can be achieved regardless of positions where the BRIGHT and CONTRAST control are set.

STEP 8-7. Picture Frame adjustment

Note: STEP 8-6. Focus adjustment and this adjustment affect each other. Repeat these adjustments until both specifications are satisfied.

Equipment:

Viewfinder screen

To be extended:

Trigger: Preparation

Remove the eye cap from the viewfinder.

BRIGHT control(viewfinder) CONTRAST control(viewfinder) PEAKING control(viewfinder)

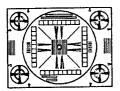
"mechanical center" "mechanical center"

"mechanical center"

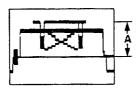
Object:

Resolution chart

Monitor screen



Waveform monitor



Lens Zoom:

Underscanned picture frame on the moni-

tor = chart frame

Lens iris:

 $A = 700 \pm 10 \text{mV}$

Test point:

(at TEST OUT terminal) **TEST OUT terminal**

Adjust point:

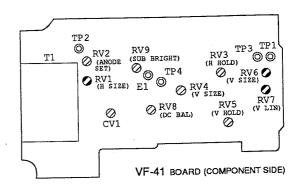
mentioned below

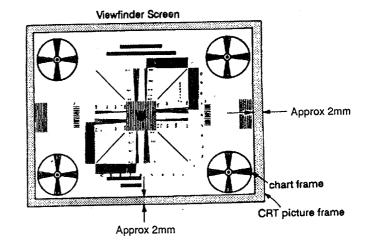
Specification:

mentioned below

Adjustment procedures

- 1. Adjust ORV7(V LIN)/VF-41 board so that the distortion of each circle at the four corners of resolution chart is minimized.
- 2. Adjust ORV1(H SIZE)/VF-41 board so that the H size of resolution chart is underscanned by approx. 2mm from the CRT picture frame.
- 3. Adjust ORV6(V SIZE)/VF-41 board so that the V size of resolution chart is underscanned by approx. 2mm from the CRT picture frame.
- 4. Adjust the centering magnet of the deflection coil so that the center of resolution chart is located at the center of viewfinder screen.
- 5. Adjust the centering magnet of the deflection coil so that the resolution chart is located in the center of viewfinder screen.
- 6. Repeat item 1 to item 5 until the specification are satisfied.





Equipment:

Waveform monitor(WFM)

To be extended:

Trigger: Preparation

Remove the eye cap from the viewfinder.

PEAKING control(viewfinder)

"Return about 10 degrees

to counterclockwise from the rightmost position."

BRIGHT control(viewfinder)

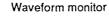
"mechanical center" "mechanical center"

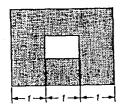
CONTRAST control(viewfinder)

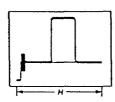
Objuct:

White window chart

Monitor screen







Lens Zoom:

Adjust the zoom control and shoot the

white window chart as shown above.

Lens iris:

 $A = 350 \pm 10 \text{mV}$

(at TEST OUT terminal)

Test point:

The picture on the viewfinder

Specification:

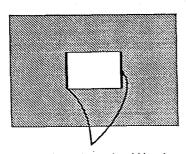
mentioned below

Adjustment procedures

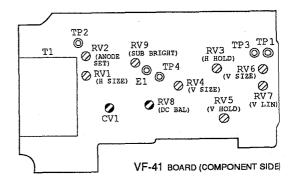
Make the peaks of the edges equal by adjusting the OCV1/ VF-41

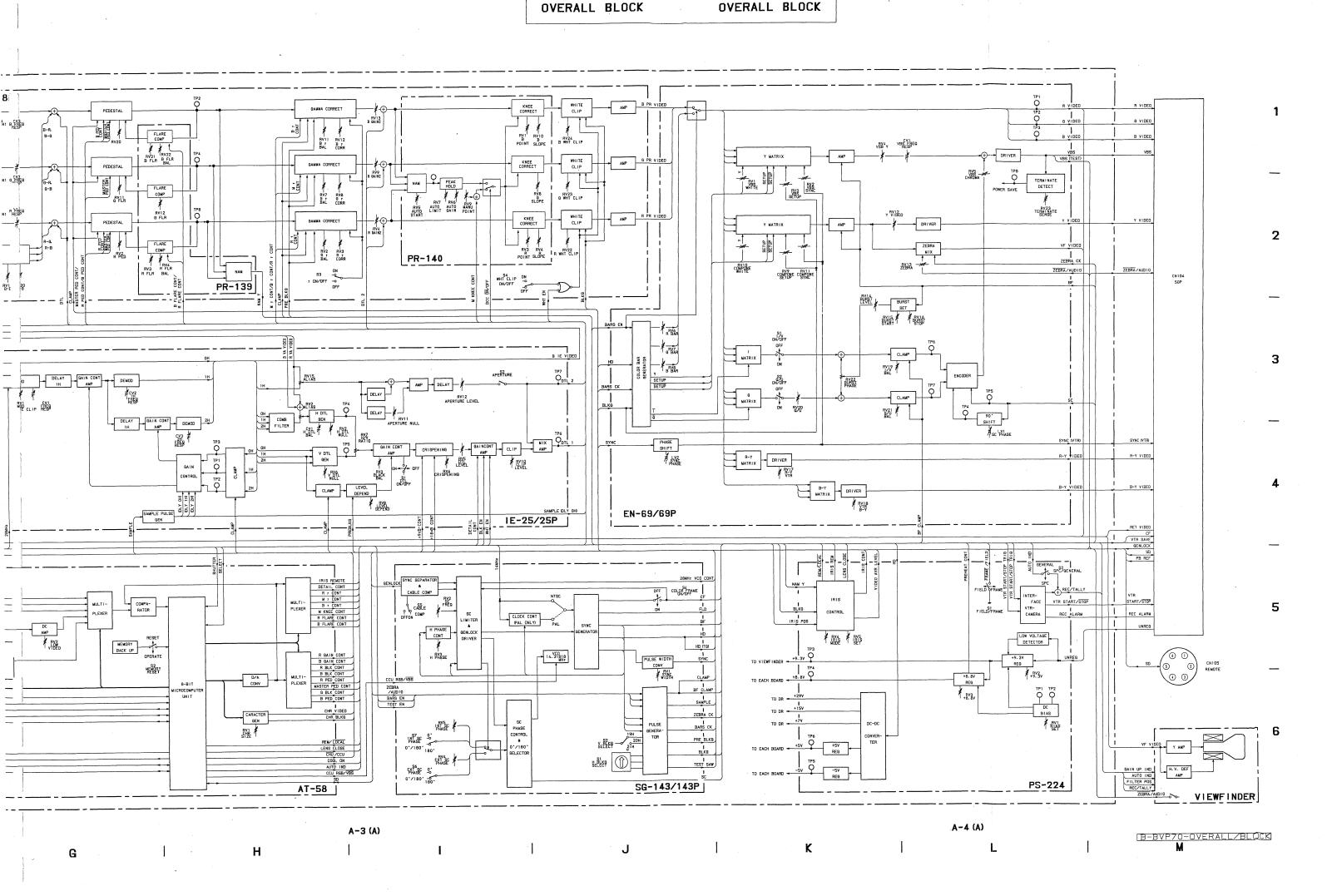
board and the RV8/VF-41 board together.

View finder



The peak level at edges should be the same.





CCD BLOCK

4

A-5 (A)
B-BVP70-CCD/BLOCK

C

1.

.

1

F

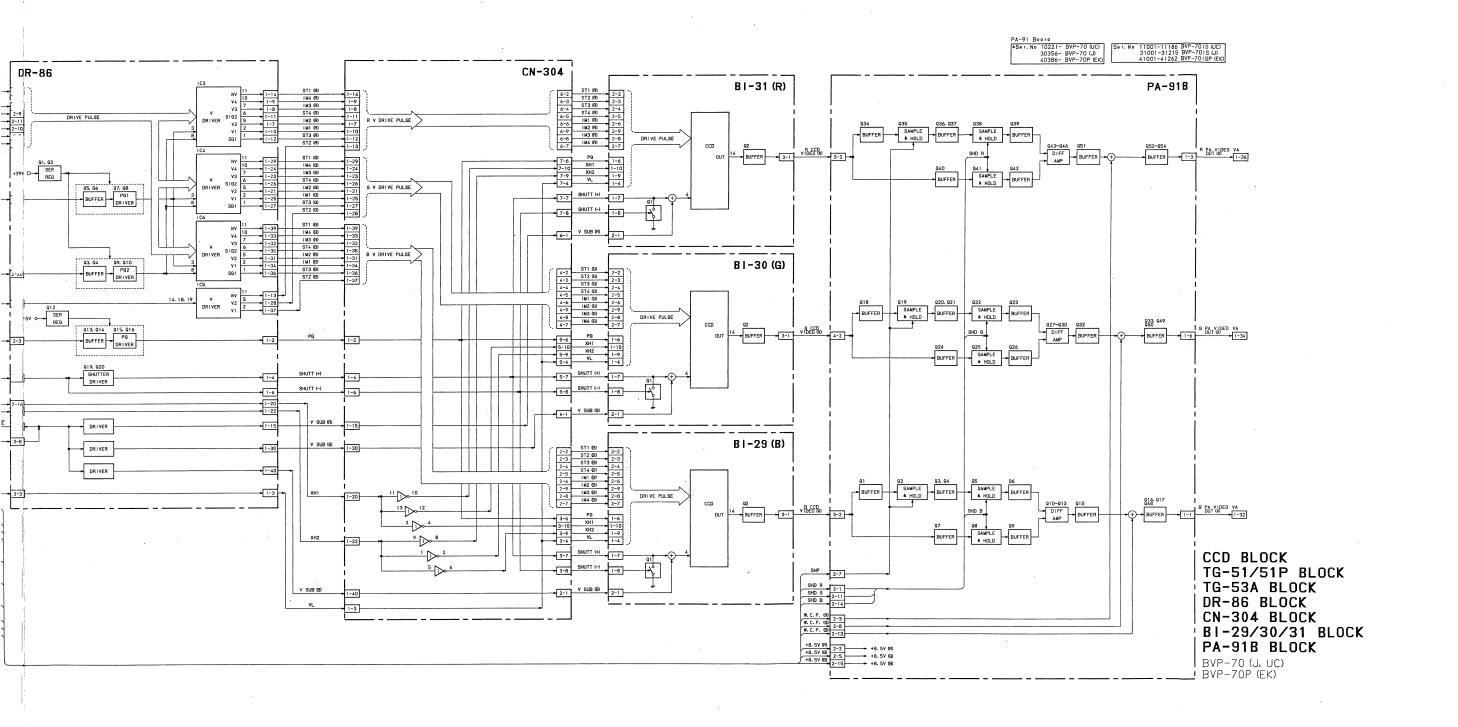
1

A-6 (A)

Ε

G

DR-86



(A) 8-A

BVP-70 (J, UC) BVP-70P (EK)

Н

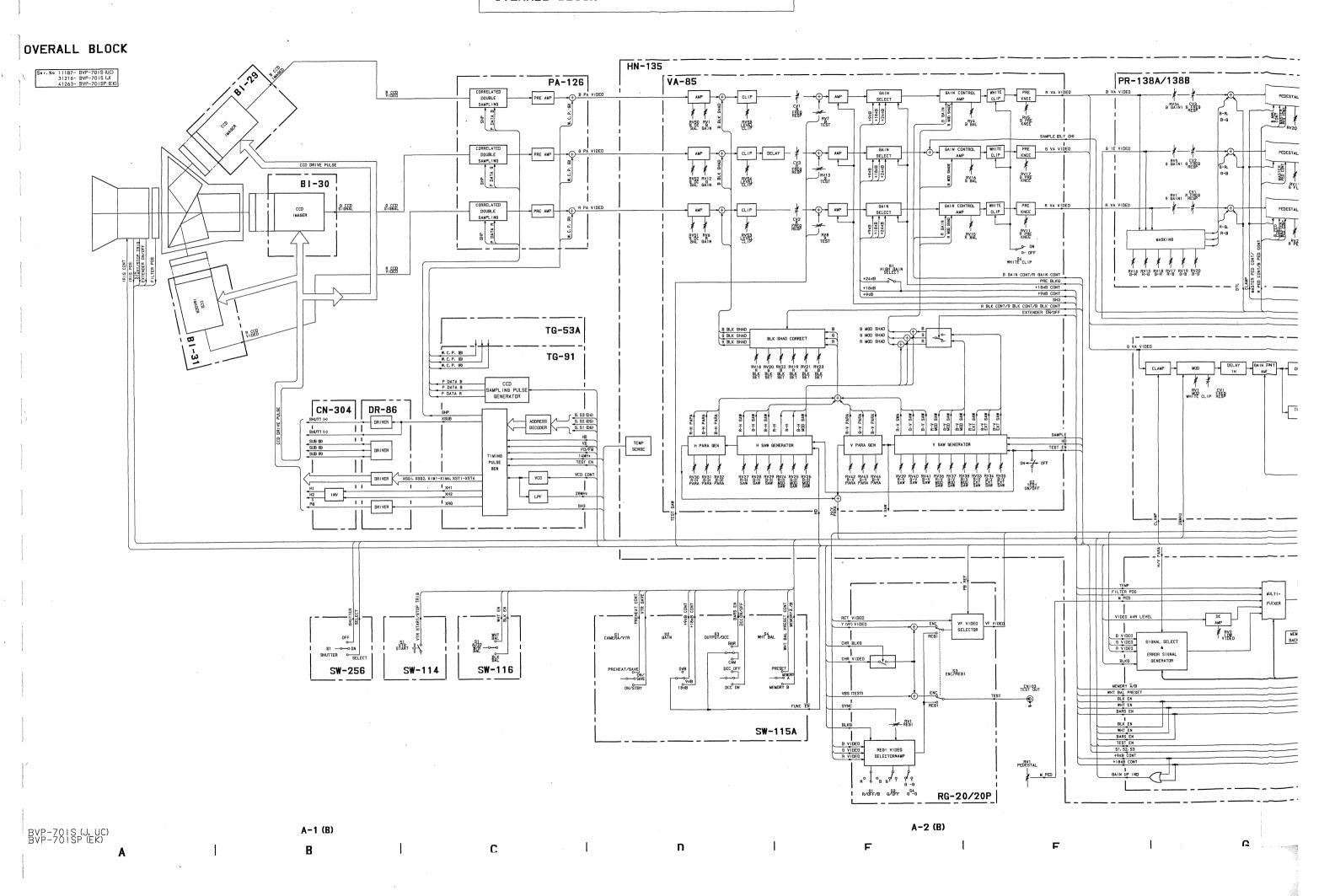
A-7 (A)

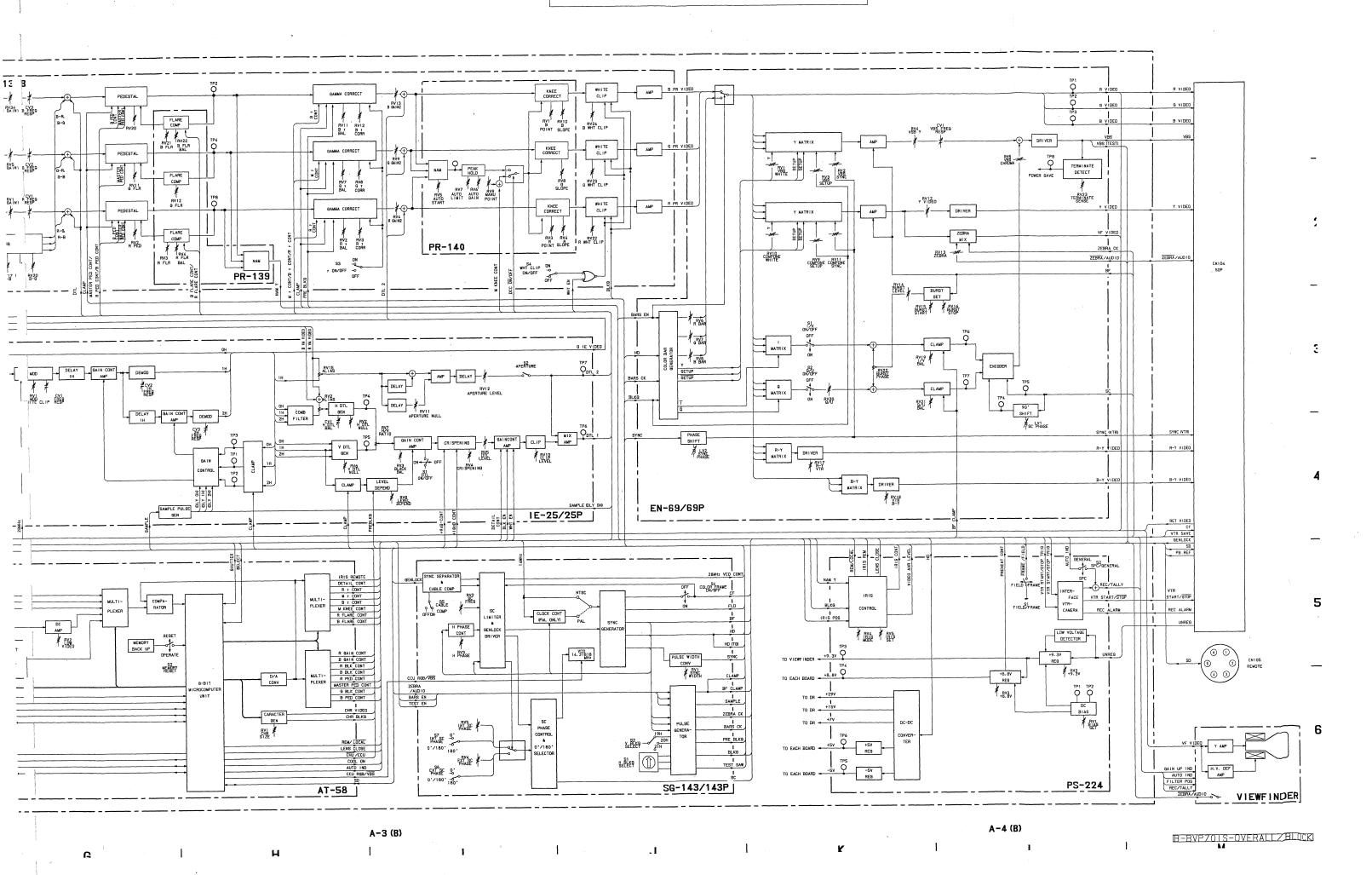
•

J

K

I





CCD BLOCK

Ser. No. 11187- BYP-7015 (UC) 31216- BYP-7015 (J) 41263- BYP-7015P (EK)

DR-86 TG-91/91P B6 B-2 B7 8-1 B5 8-3 TG-53A PS 1-31 HN FLD 4-5 HN +8. 8V 2-1

A-5 (B)

F

A-6 (B)

F

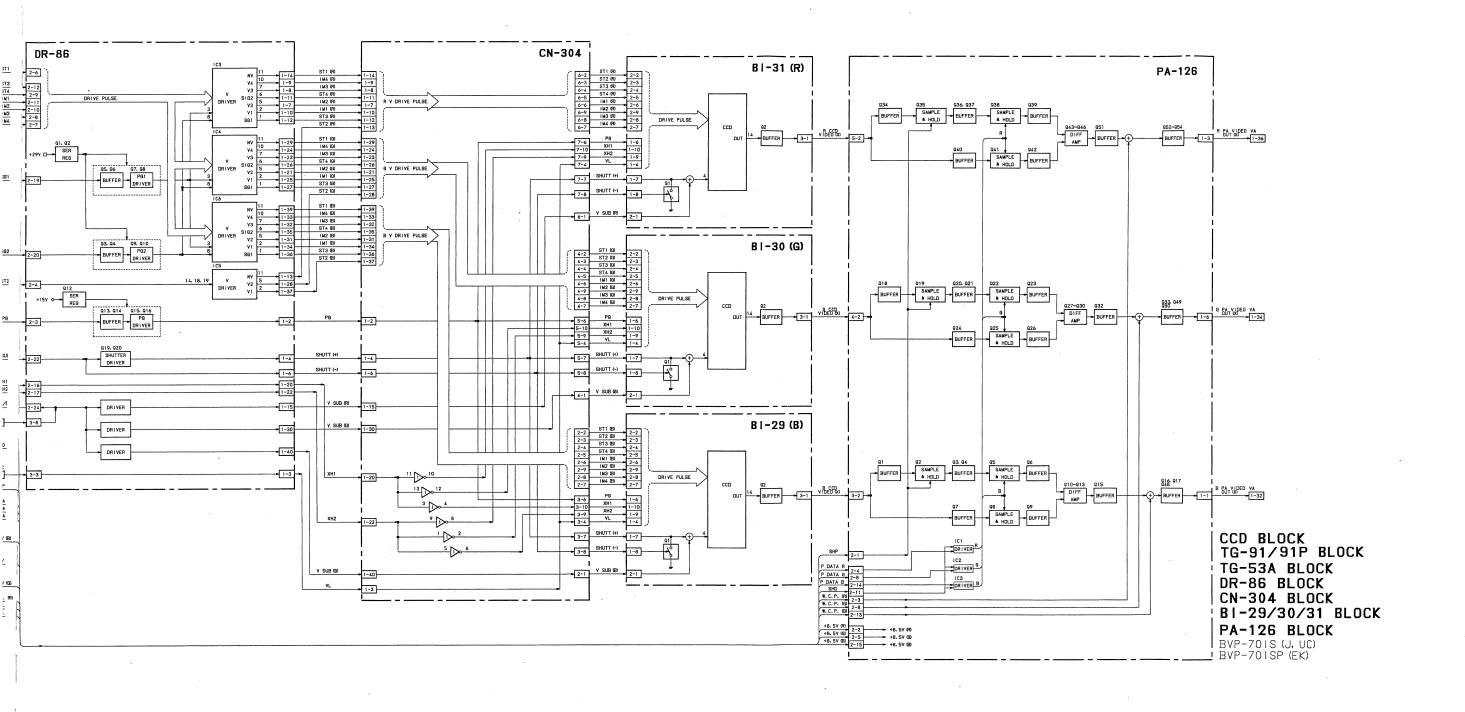
B-BVP70IS-CCD/BLOCK

1

ח

1

CCD BLOCK

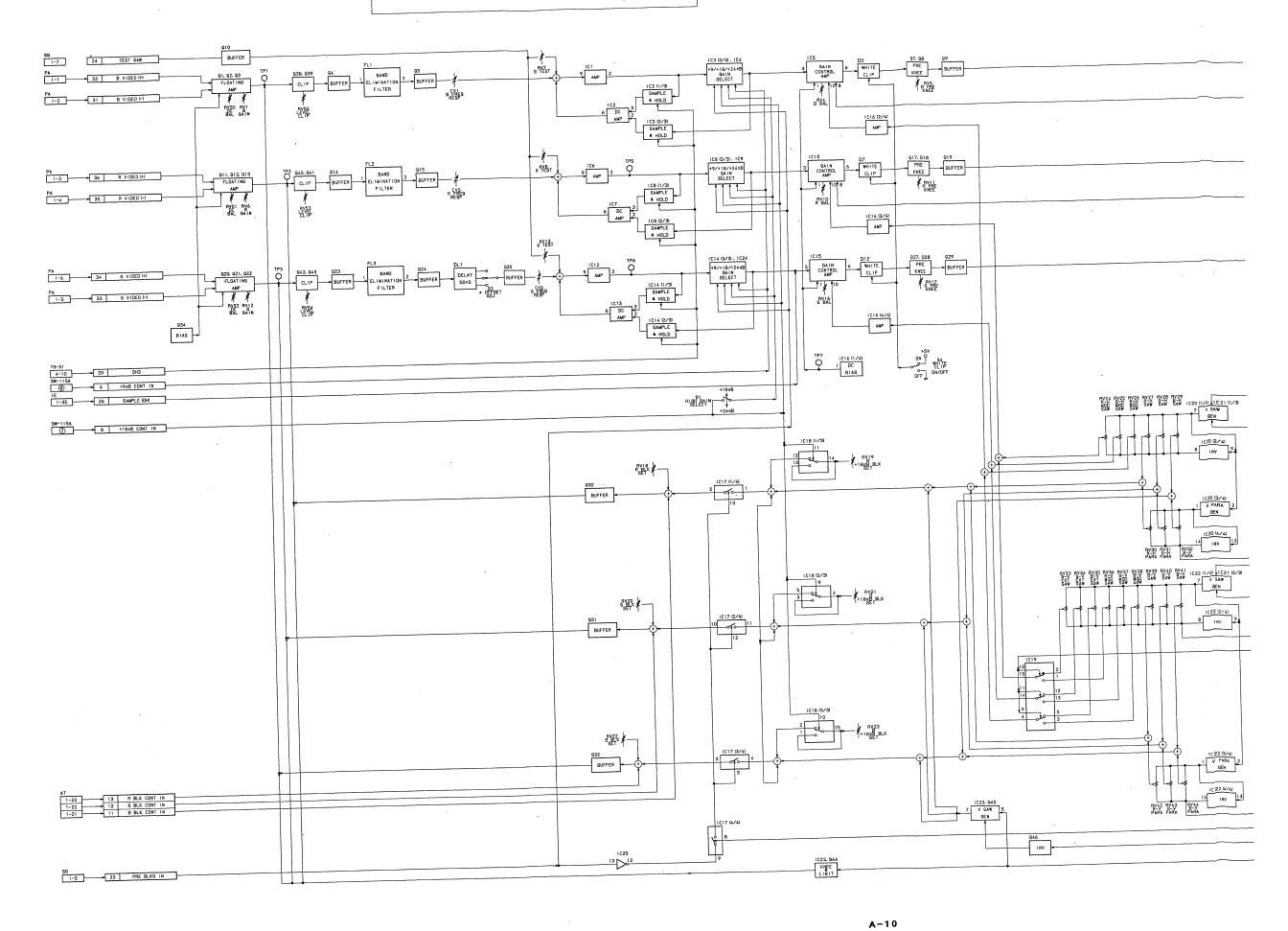


A-7 (B)

A-8 (B)

- 1

VA-85 BLOCK



BVP-70 (J, UC) BVP-70P (EK)

. |

а-9 В

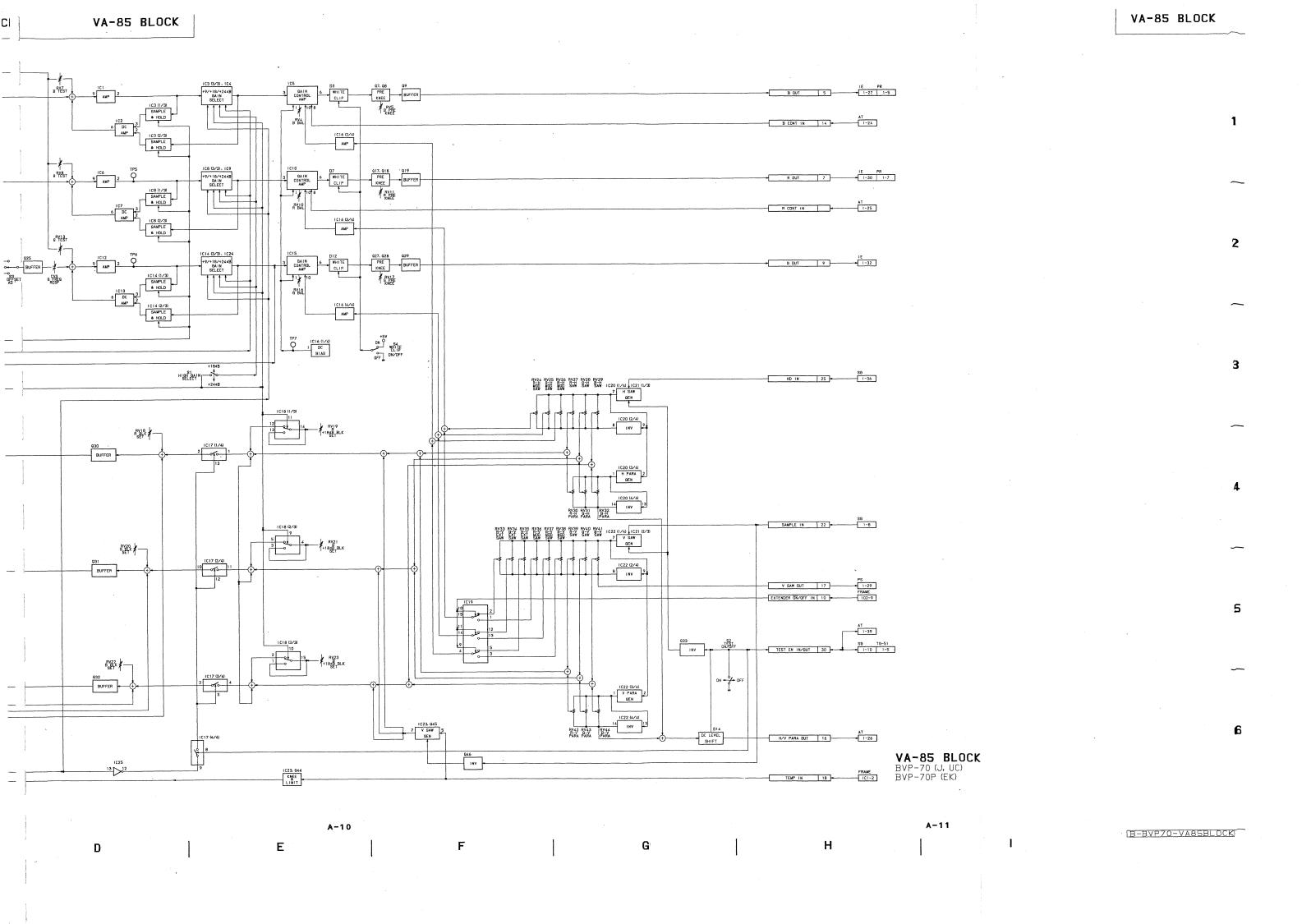
.

E

1

F

G



IE-25/25P BLOCK

1

2

3

4

. .

B-BVP70-TE25BLOCKI

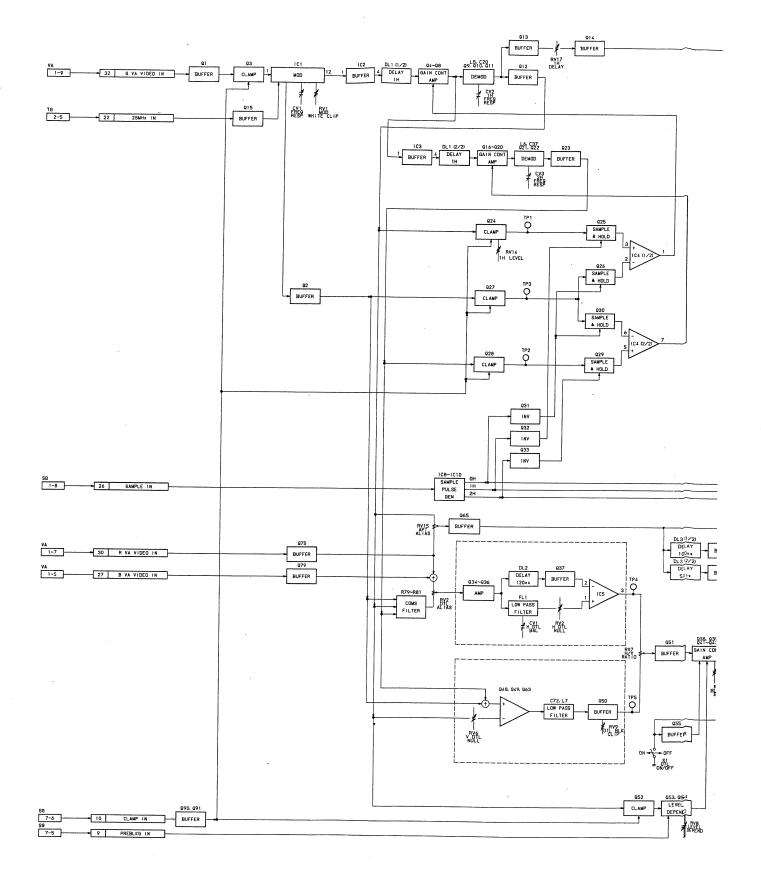
С

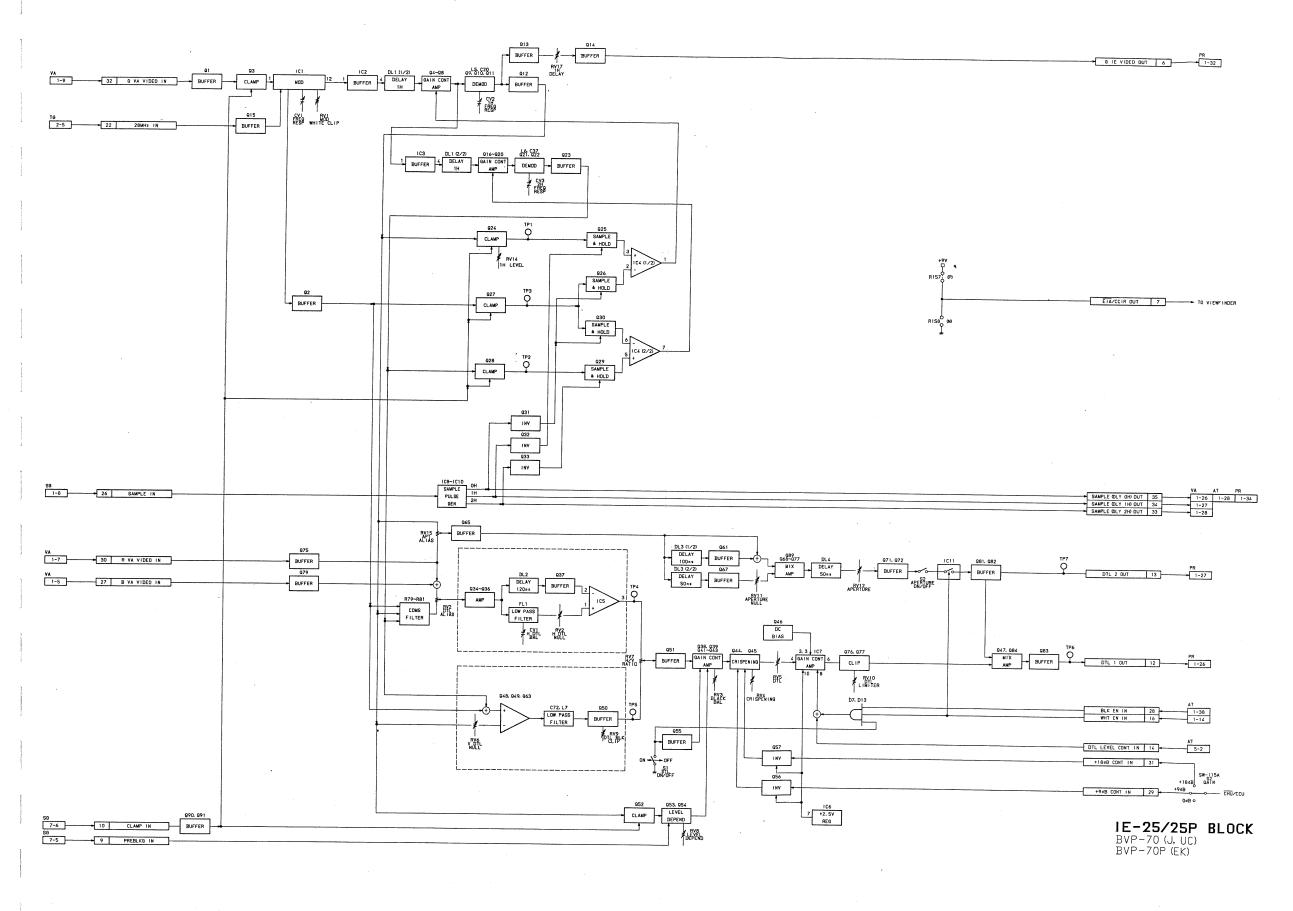
D

E

F

G





A-13

F

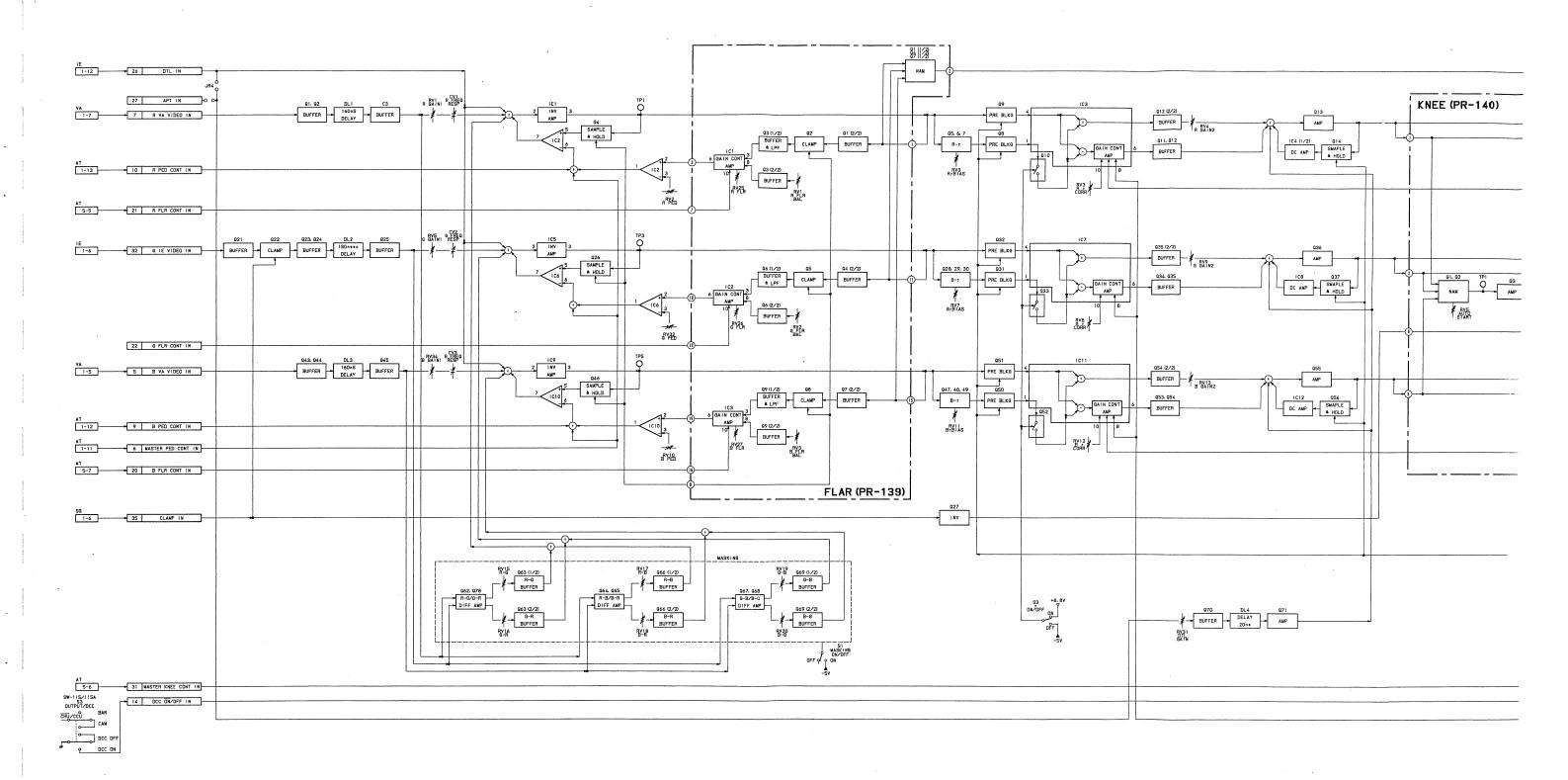
G

4

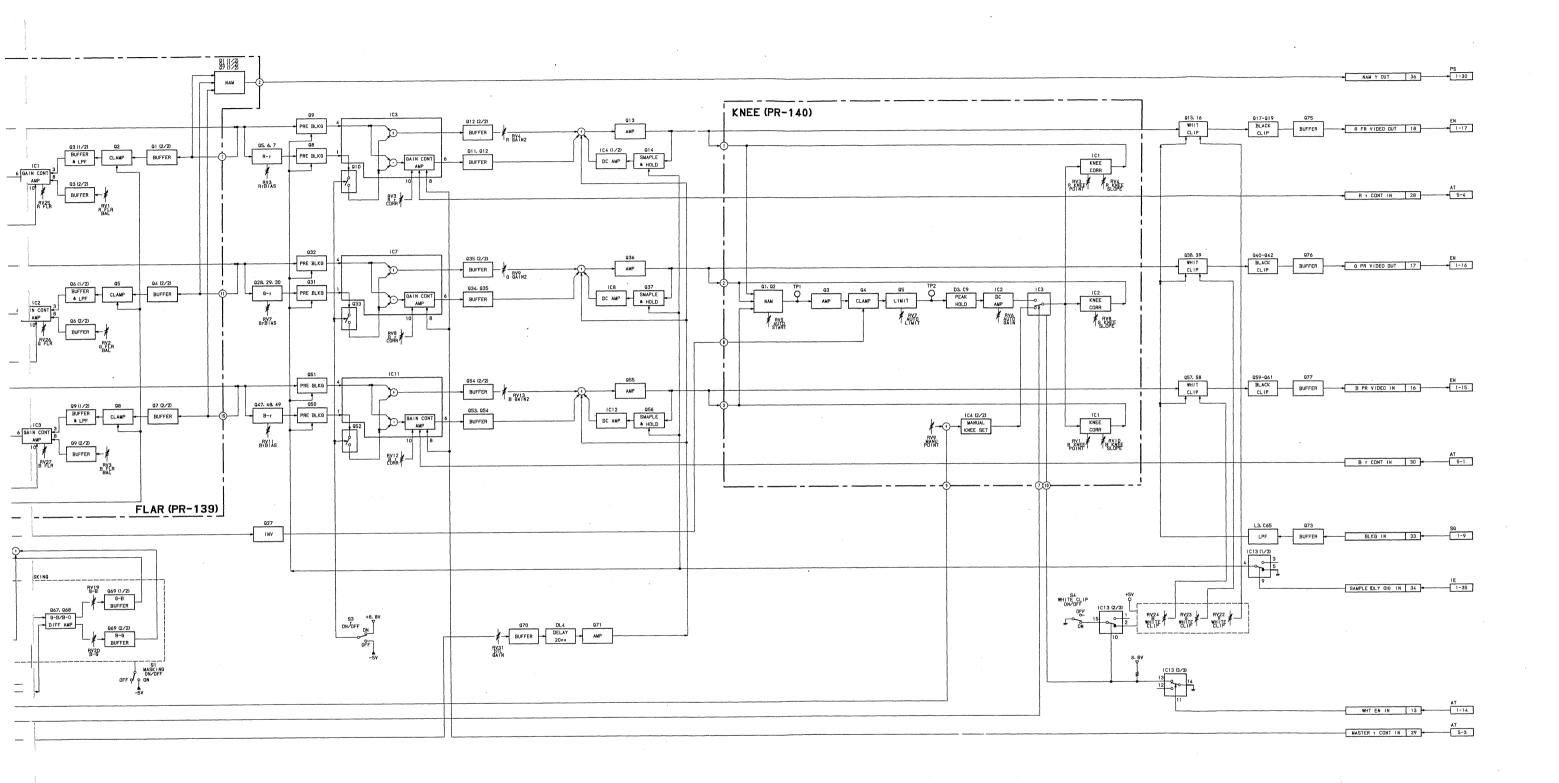
A-14

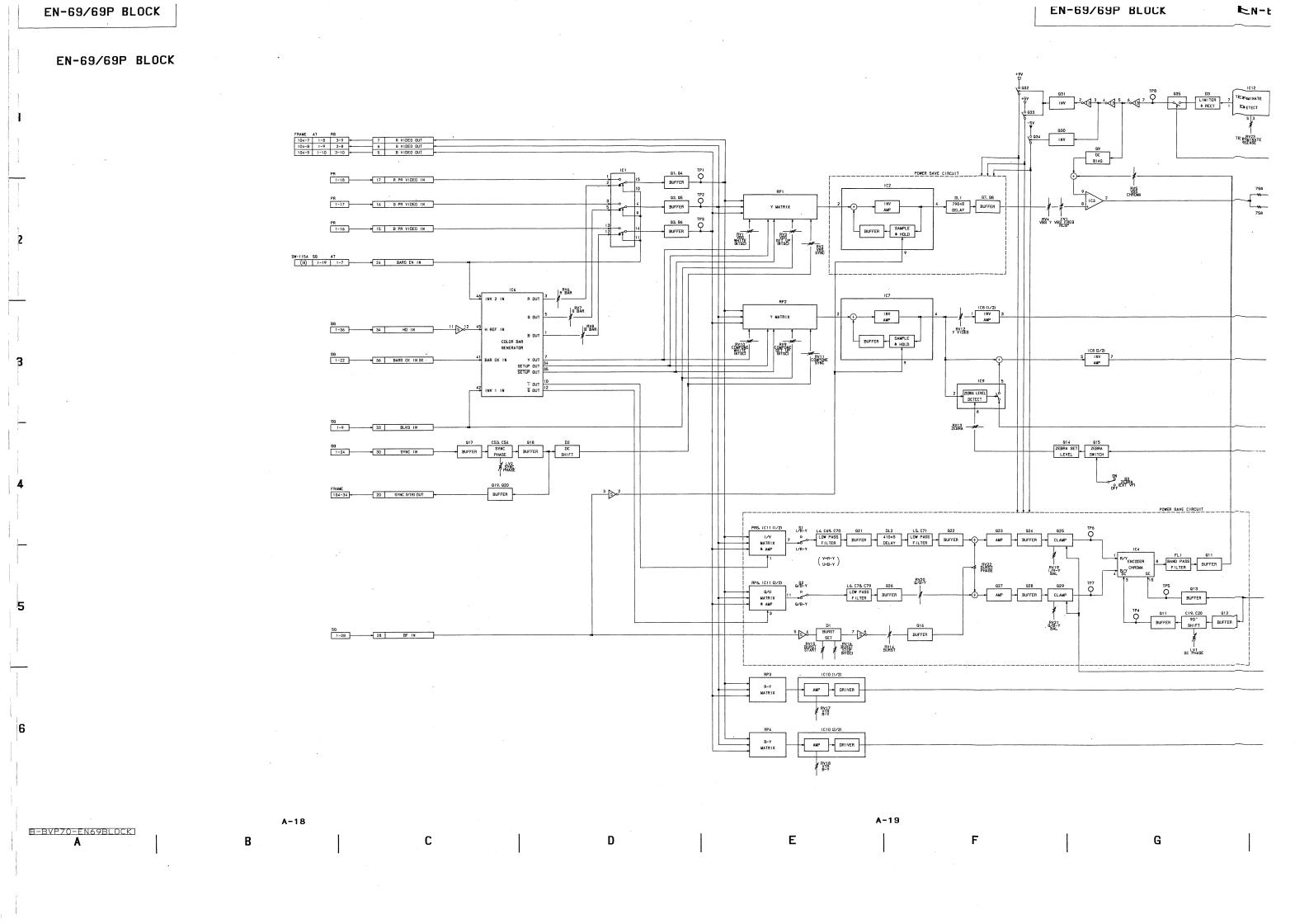
BVP-70 (J, UC BVP-70P (EK)

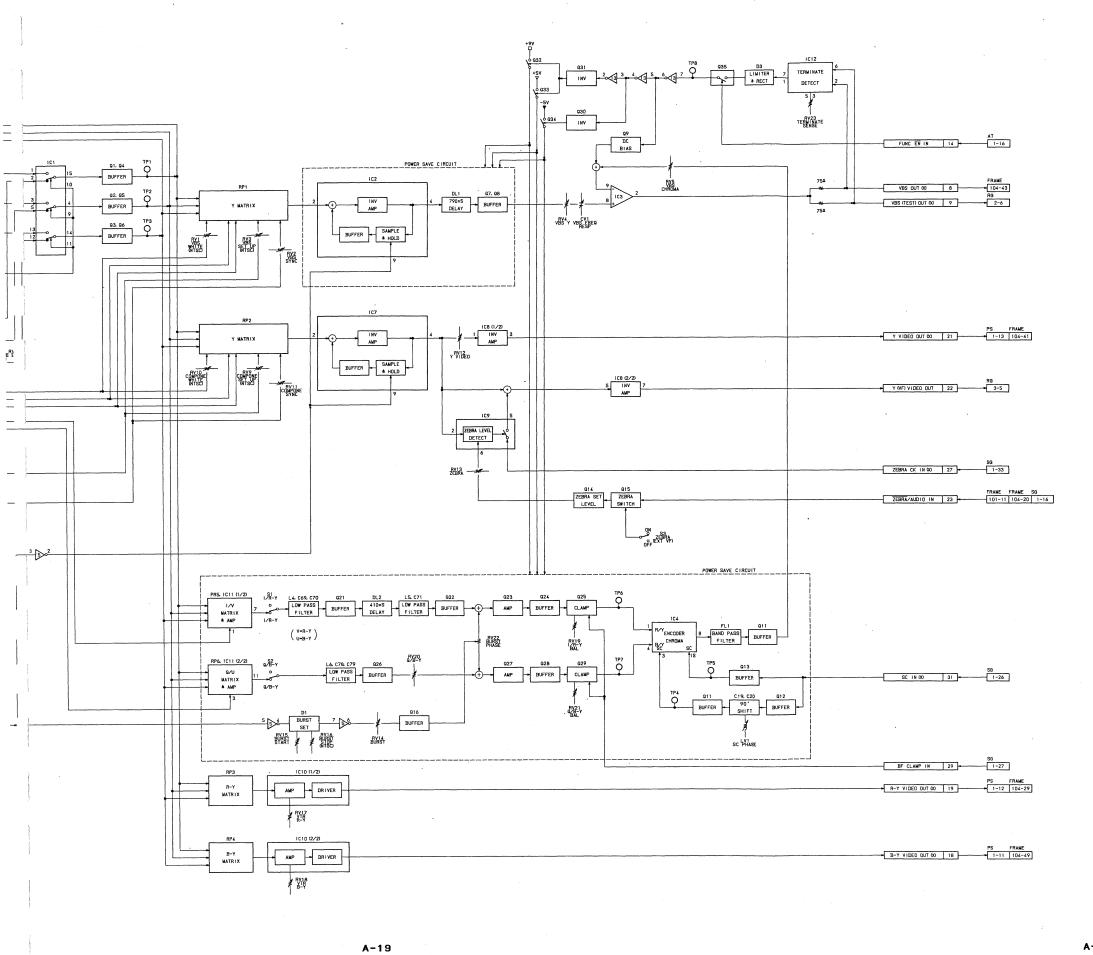
PR-138 BLOCK



1: 3

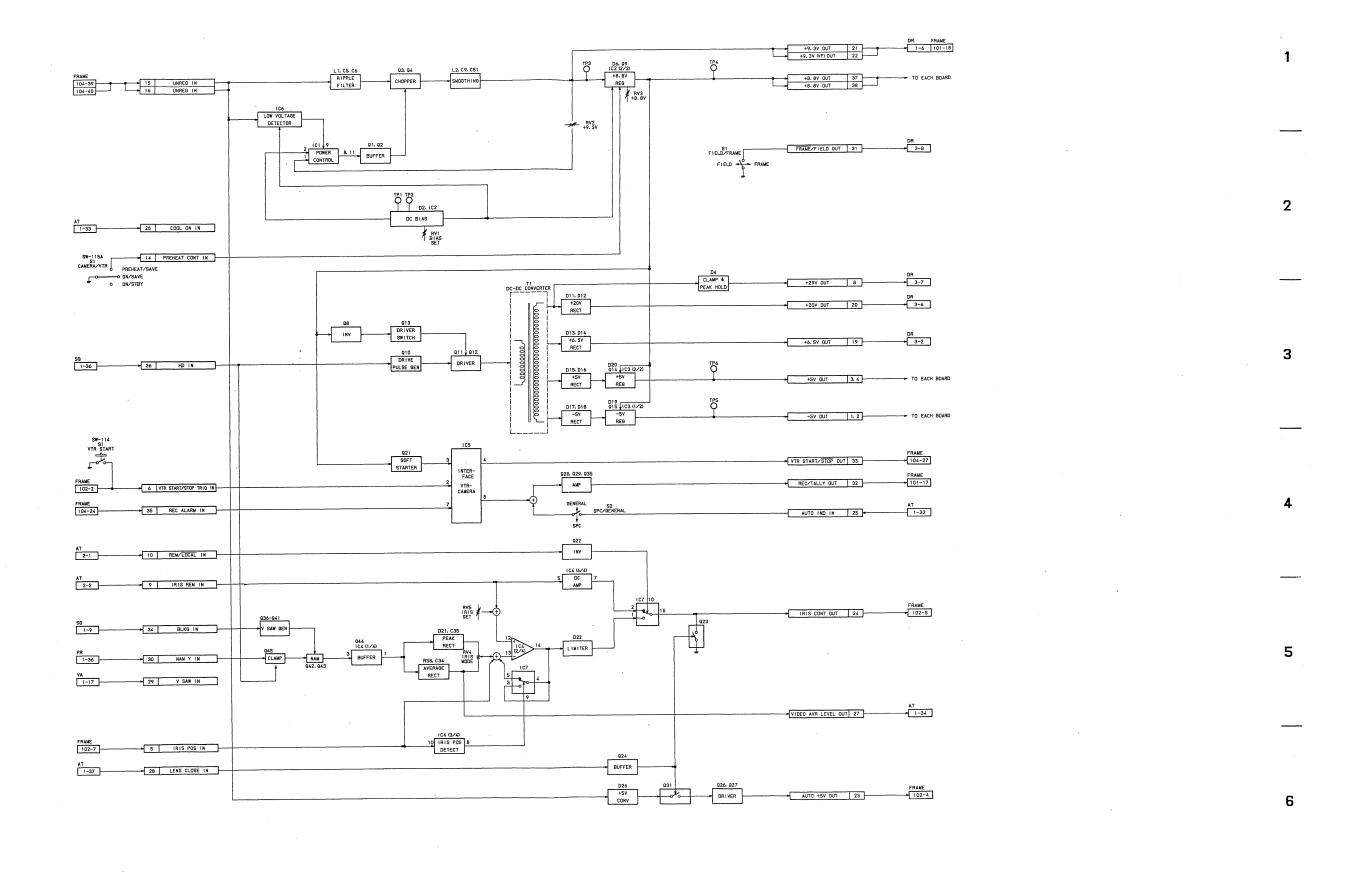






A-20

PS-224 BOARD



BVP-70 (J, UC) BVP-70P (EK)

A-21

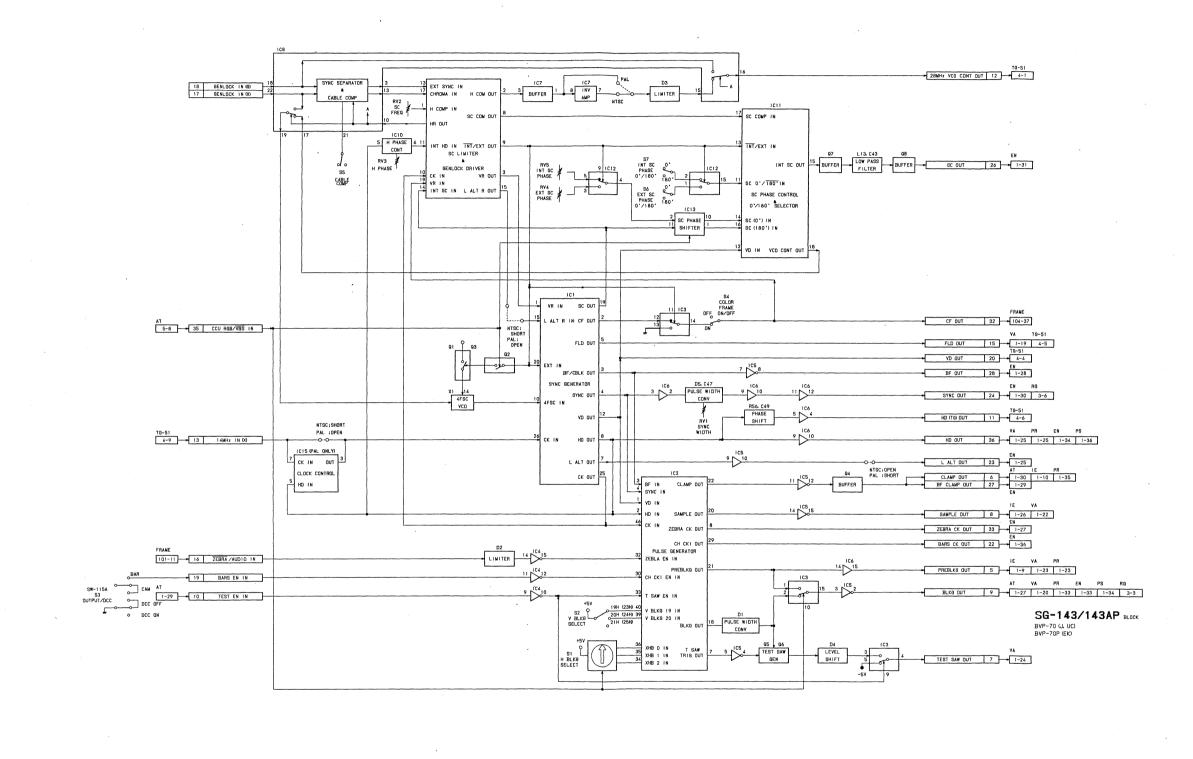
C

A-22

B-BVP70-PS224B0ARD

Ε

SG-143/143AP BLOCK



-23

A-24

BVP-70 (J, UC) BVP-70P (EK)

F

Α

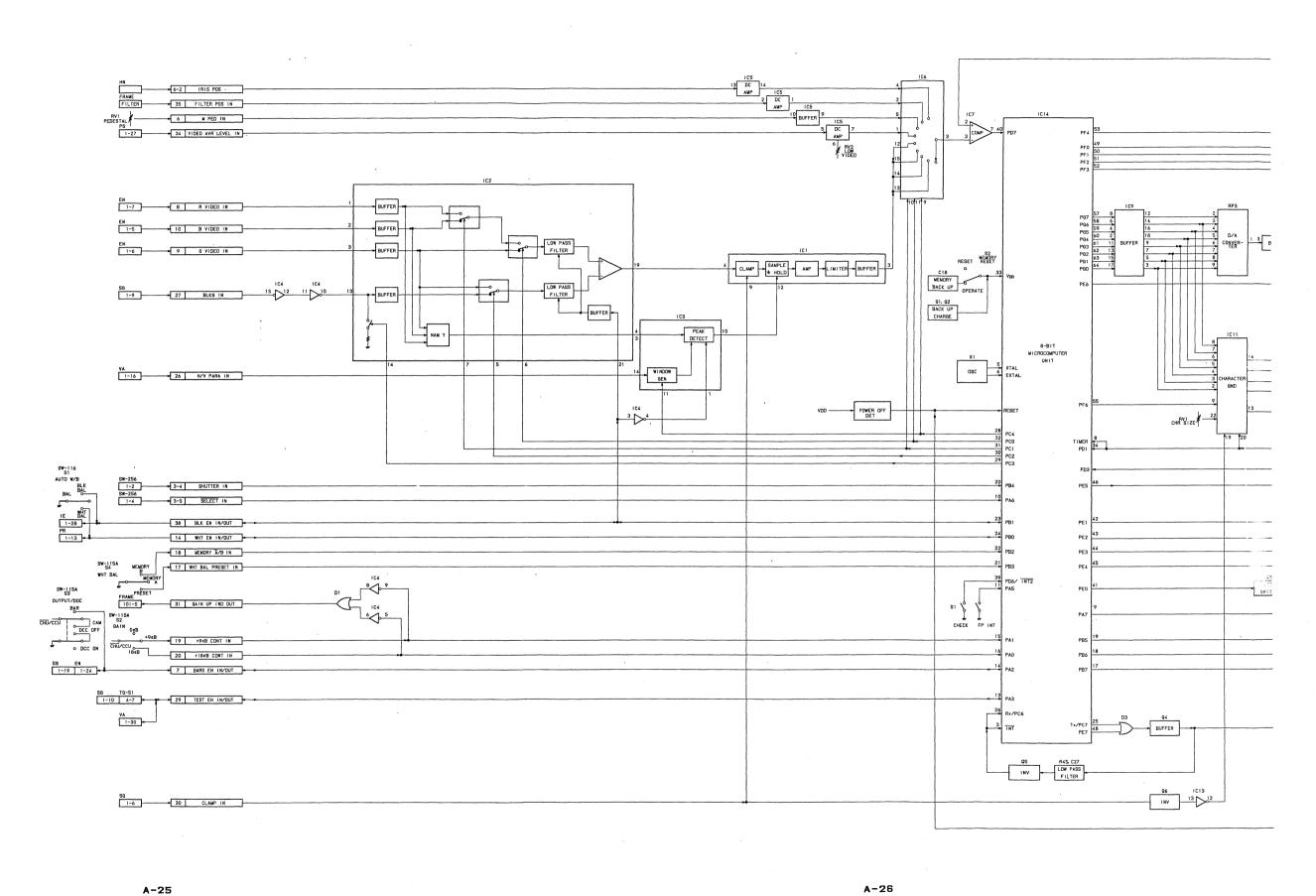
B-BVP70-SG143BLOCK

В

С

D

E

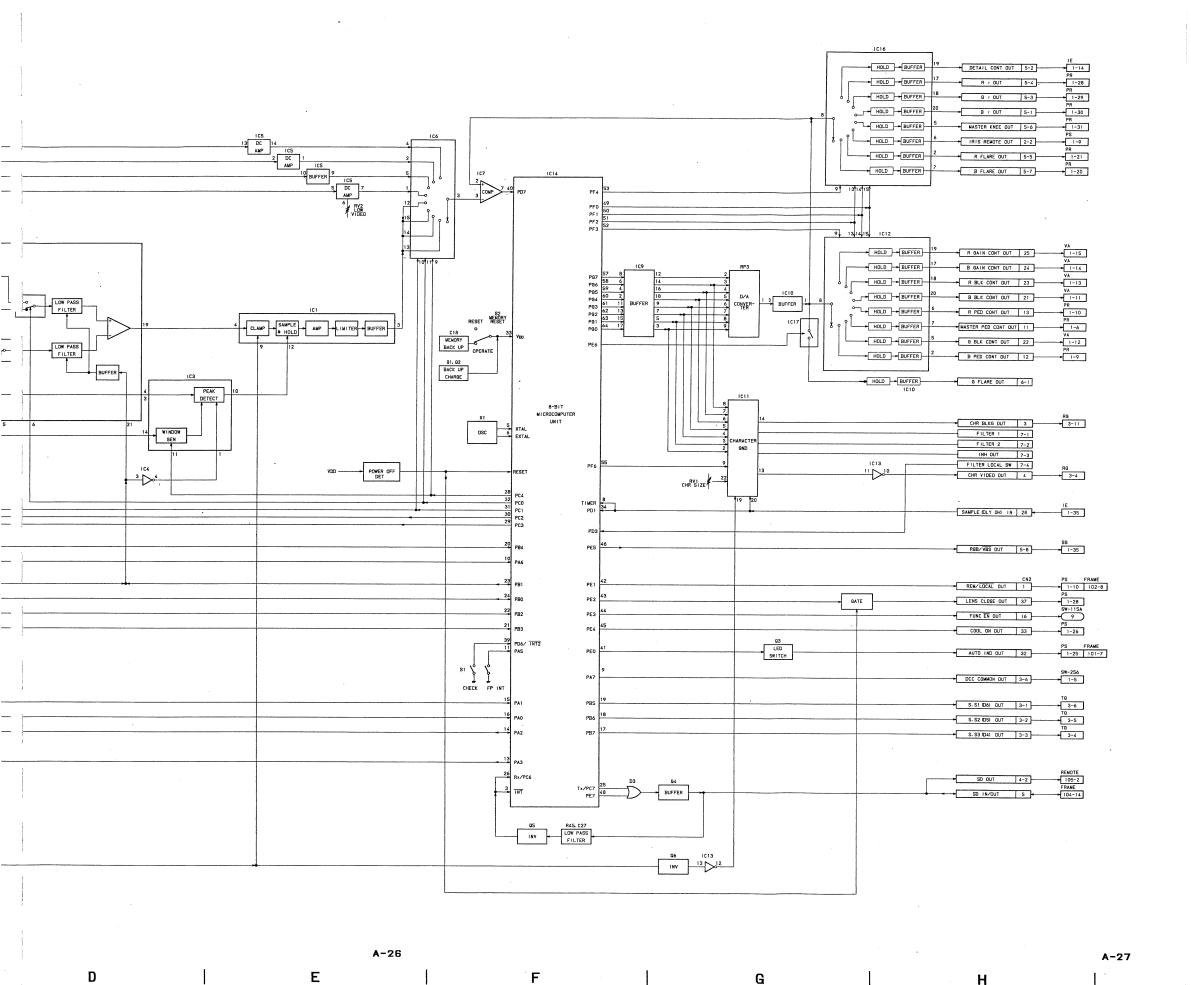


BVP-70 (J, UC) BVP-70P (EK)

В

С

Ε

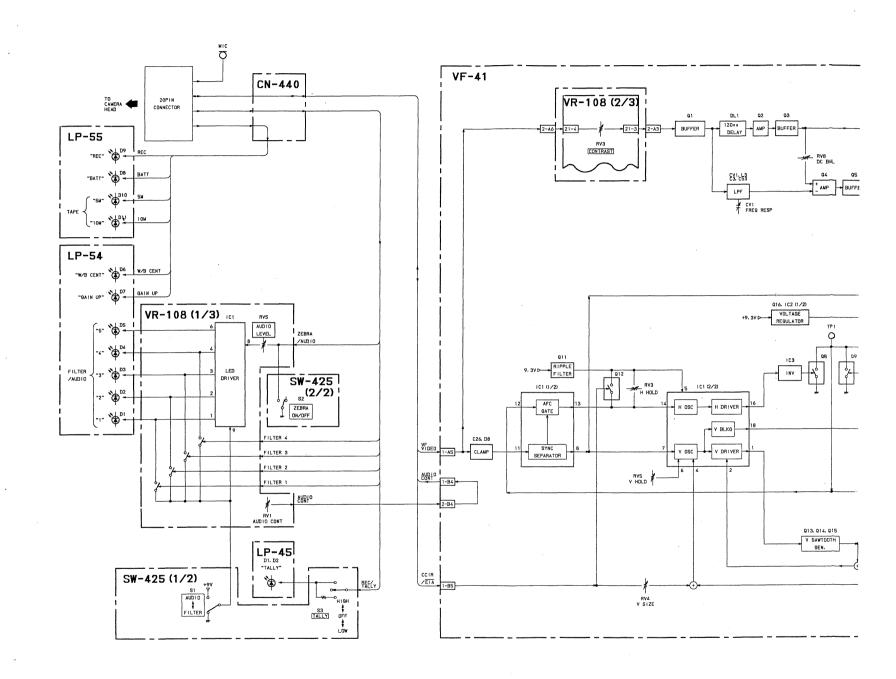


B-BVP70-AT58BLOCK

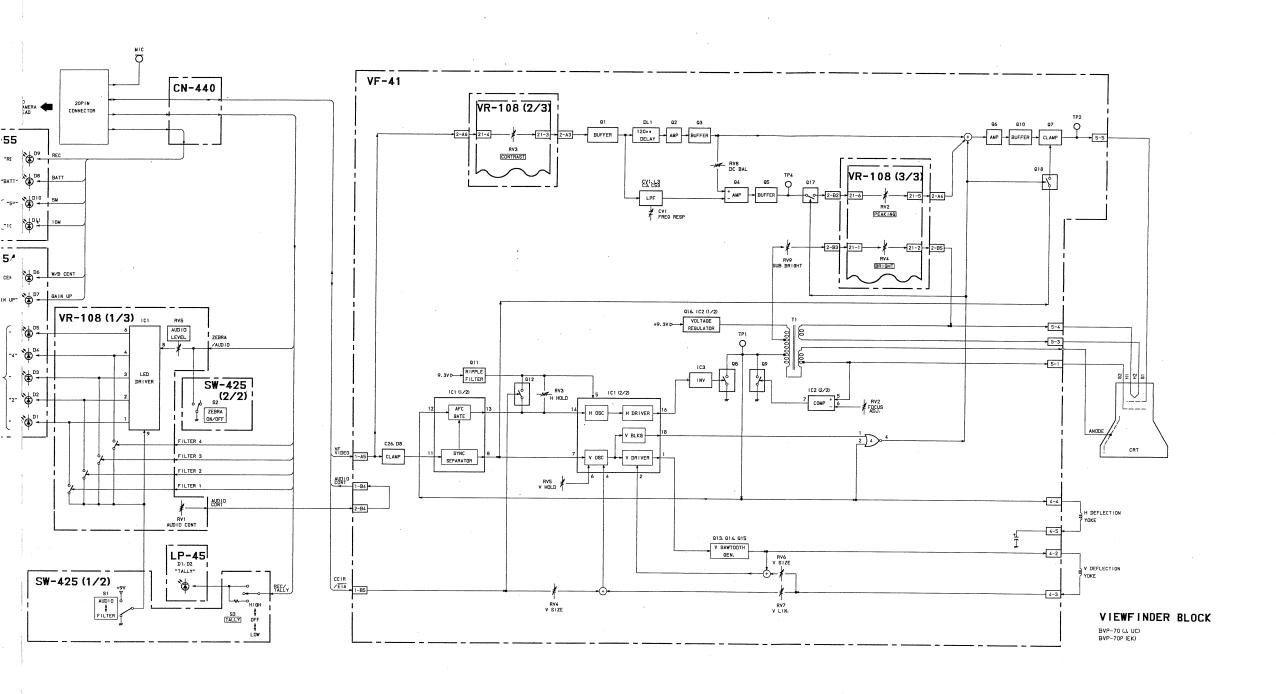
Н

VIEW

VIEWFINDER BLOCK



Ε



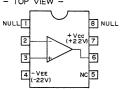
Ε

SECTION B SEMICONDUCTOR

•					
TYPE	PAGE	TYPE	PAGE	TYPE	PAGE
1S1555 1S1555-S 1S2835	.B-2 .B-2	CX22017 CX518 CX7930A	.B-6 .B-6	SN74HC244NS. SN74HC574NS.	.B-18
1S2837 1SS119		CX7968A CX7969		TC4011BF TC4023BF TC4049BF	.B-18
1SS123 1SS97	.B-2	CXA1065M		TC4051BFHB TC4053BF TC4053BFHB	.B-18 .B-18
1SZ46A		CXD8002	.B-11	TC4066BFHB TC4069UBF	.B-19 .B-19
2SA1162G 2SA1226 2SA1462	.B-2	DTC144WK ERA81-004		TC4081BF TC4538BF	.B-19
2SA1463 2SA812		ERB81-004 GL9NG2		TC40H241F TC4S01F	
2SB624 2SB733 2SB739	.B-2	GL9RG2 GL-5LR40	.B-2	TC4S30F TC4S69F	.B-19
2SB815		HA11423MP	.B-14	TC504013BF	.B-20
2SC1009A 2SC1623 2SC2712 2SC2757	.B-2 .B-2	HD6305YOD 25P HD74AC04P-R.		TC50H001F TC74HC02F TC74HC04F TC74HC4066F.	.B-20 .B-20
2SC3360	.B-2	HSM88AS		TC74HC4538F. TC74HC574F	.B-19
2SD1048 2SD773	.B-2	HZ?A?L HZ?ALL HZ?B?L	.B-2 .B-2	TC7S04F	
2SK300 2SK508 2SK612	.B-2	HZ?BLL HZ?C?L HZ?CLL	.B-2	TL0124	.B-2
2SK620 2SK94	.B-2	LB1423		TL494CNS TL7700CPS	.B-20 .B-21
3SK163		LM2903M LM2904M	.B-15	TLC27L2CPS TLC27L4CNS	
AD707JR		LM35DZ		TLG124A	.B-2
AN6701S		MB7114LPF		TL062CPS	
BH1210 BH1211 BH1212A	.B-3	MC74HC4053F. MN1237AD		TL064CNS TL068CLP TL082CPS	.B-20
BH1213 BH1214	. B-3	MP7523JN		TL084CNS	
BH1215A BH1216	.B-4	NTM2369	.B-2	V11N V09C	
BH1217 BH1218 BH1219A	. B-4	RC1496M	.B-17	XN6435 XN6501	
BH1220 BH1221	.B-4	RD??M	.B-2	XN6534	
BX1179		SBX1516 SBX1525		μ05G	
BX1338 BX1339A BX1356	.B-5 .B-5	SBX1588 SEL2110R	.B-17	μPC311G2 μPC358G2 μPC812G2	.B-22
DA1000		OLLLIION		μPD27C256AG.	
				-15	

AD707JR (ANALOG DEVICES) FLAT PACKAGE

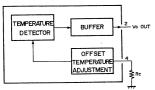
OPERATIONAL AMPLIFIER - TOP VIEW -



AN6701S (MATSUSHITA) FLAT PACKAGE

TEMPERATURE SENSING - TOP VIEW -

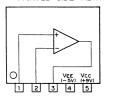




Rc: RESISTOR FOR CALIBRATION

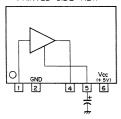
BH1210 (SONY)

VIDEO AMPLIFIER
- PRINTED SIDE VIEW -



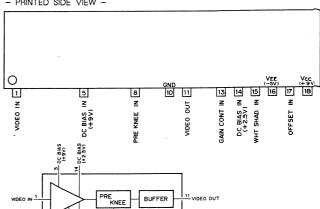
BH1211 (SONY)

VIDEO DRIVER - PRINTED SIDE VIEW -



BH1212A (SONY)

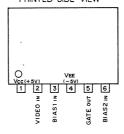
GAIN CONT AMPLIFIER
- PRINTED SIDE VIEW -

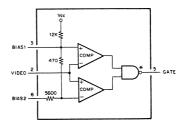


BH1213 (SONY)

VIDEO LEVEL DETECTOR - PRINTED SIDE VIEW -

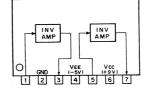
GAIN CONT 1





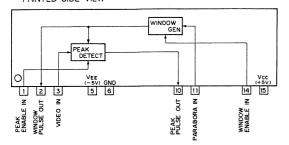
BH1214 (SONY)

DUAL VIDEO INV. AMPLIFIER - PRINTED SIDE VIEW -



BH1221 (SONY)

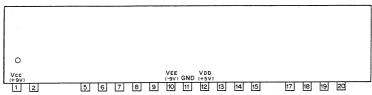
SAMPLE PULSE GENERATOR - PRINTED SIDE VIEW -



BX1179 (SONY)

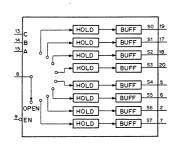
8-CHANNEL SELECTABLE SAMPLING HOLDER

- PRINTED SIDE -



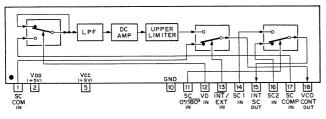
"ON" CHANNEL	Α	В	С	EN
S0	0	0	0	0
S1	1	0	0	0
S2	0	1	0	0
S3	1	1	0	0
S4	0	0	1	0
S5	1	0	1	0
S6	0	1	1	0
S7	1	1	1	0
OPEN	Х	Х	X	1

O:LOW LEVEL 1:HIGH LEVEL X:DON'T CARE



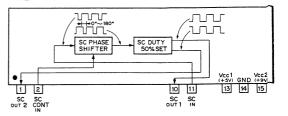
BX1338 (SONY)

APC AMPLIFIER AND SC 0° /180° SELECTOR - REAR VIEW -



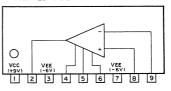
BX1339A (SONY)

SC PHASE SHIFTER - REAR VIEW -



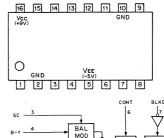
BX1356 (SONY)

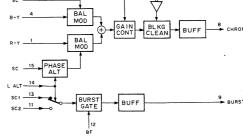
VIDEO OUTPUT AMPLIFIER - PRINTED SIDE -

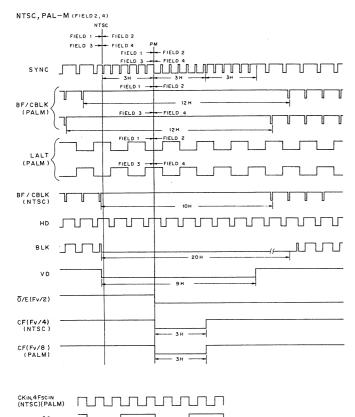


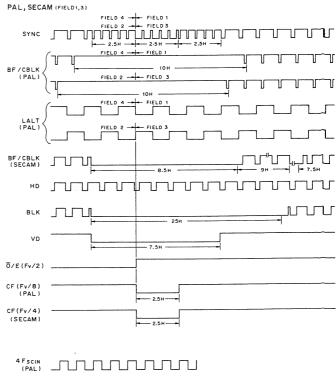
CX22017 (SONY)

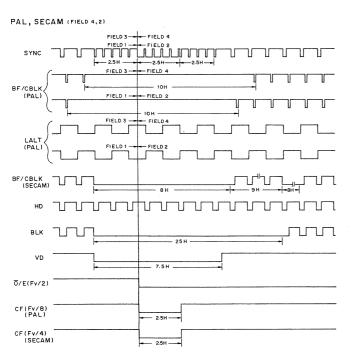
VIDEO SIGNAL PROCESSOR - TOP VIEW -

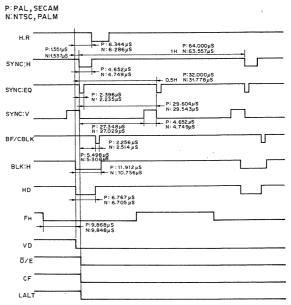












N:2.5µS P:2.2µS DELAY TIME (SEE TABLE 5)

VARIABLE RANGE (SEE TABLE 4)

-10.76µS

-2.8µS

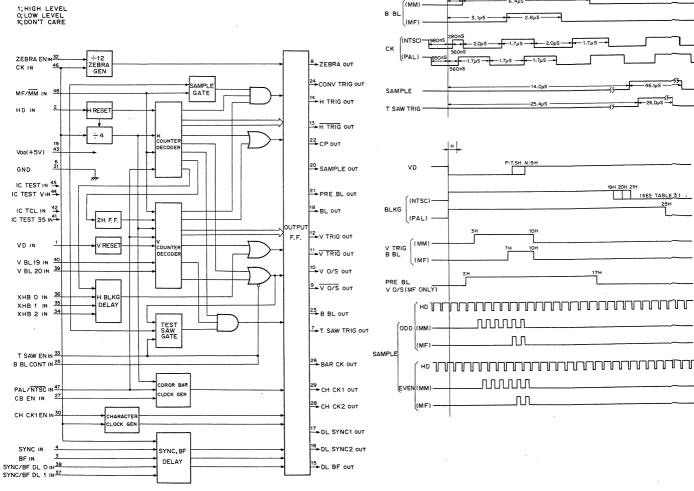
1. SYSTEM DES	IGNATION
INPUT	SYSTEM
PAL/NTSC IN	313121
1	PAL, SECAM

2.TYPE OF TUBE					
INPUT	FUNCTION				
MF/MM IN	TONCHON				
1	MAG-STA TUBE				
0	MAG -MAG TUBE				

3.V BL	G WIDT	TH (NTSC ONLY
INP		V DI KC WIDTH
V BL 19	V BL 20	V BLKG WIDTH
1	X	19 H
0	1	20H
0	0	21 H

4. H	BLKG	WIDT	н	
	NPUT		BLKG W	IDTH (µS)
XHB2	XHB1	хнво	NTSC	PAL
1	1	1	10.27	11.49
1	1	0	10.34	11.56
1	0	1	10.41	11.63
1	0	0	10.48	11.70
0	1	1	10.55	11.77
0	1	0	10.62	11.84
0	0	1	10.69	11.91
0	0	0	10.76	11.98

5. DELAY	TIME			
INF	TU	DELA	Y TIME (ıS)
SYNC/BF DL1	SYNC/BF DL2	DL SYNC 1	DL SYNC 2	DL BF
1	1	140	210	140
1	0	210	280	210
0	1	630	700	630
0	0	700	770	700



HD SYNC

BF DL BF

DL SYNC 1 DL SYNC 2

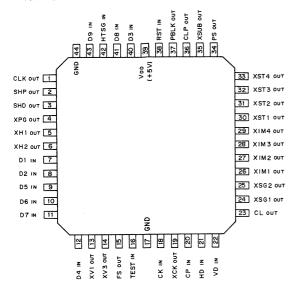
(NTSC) BLKG

CONV TRIG

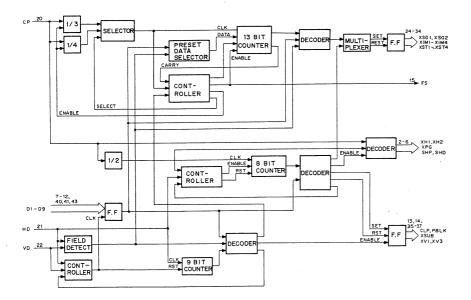
СР

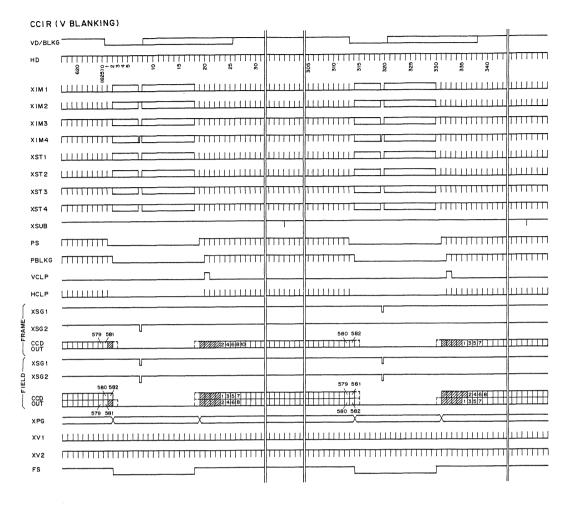
CXD8002 (SONY)

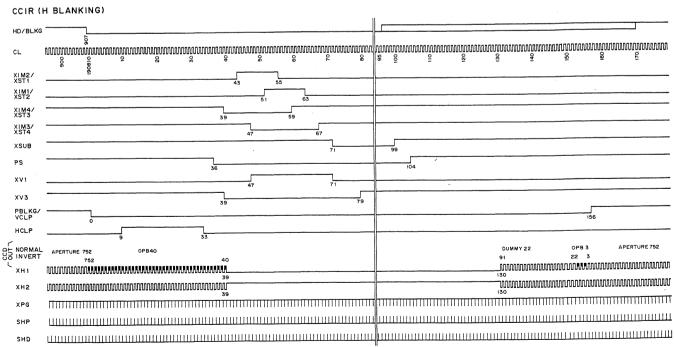
C-MOS TIMING PULSE GENERATOR FOR CCD - TOP VIEW -



	LOW	LEVI	EL H	IGH LEVEL		7	D1	XIM 1
D1	(CIR		EIA		8	D2	XIM 2
D2	FF	FRAME FIELD				40	03	XIM 3
					N. Control of the Con	12	D4	XIM 4
HUT	TER S	PEED	SEL			9	05	
D4	D5	D6	D7	SHUTTER		10	D6	XSTI
				SPEED (sec)		11	D7	XST 2
0	0	0	1	OFF		41	D8	XST 3
0	0	1	1	1/125		43	09	XST 4
0	1	0	1	1/250				
0	1	1	1	1/500				XSG I
1	0	0	1	1/1000	-	42	HTSG	xsg 2
1_	0	1	1	1/2000				
1	1	0	1	1/4000		38	RST	P
1_	1	1	1	1/10000		16	TEST	
х	x	Ιx	0	1/100 (EIA)				XHI
	L			1/60 (CCIR)				XH2
: LC	W LE	VEL						XPG
	GH LE							XSUE
; DC	DN'T (CARE				21		
						22	VD	SH
<			: CLO	CK INPUTS				SHI
CK				RTED CLOCK O	UTPUT			
LK. [.] D	CL			CK OUTPUTS	INDUT		l	CL
D				TICAL DRIVE IN				PBL
	XSG2				R READ OUT FROM IMAGE SENSOR			F
	- XIM				R IMAGE REGISTOR DRIVE OF CCD			
511	– XST				OR STORAGE REGISTOR DRIVE OF CCD	18 20	C.	CL
	XH2				OR TRANSMISSION CLOCK OUTPUTS	20	CP	xc
1 1.			: PRE	CHARGE GATE	PULSE OUTPUT		i	С
PG					DISCHARGING PULSE OUTPUT		l	×ν
PG SUB					SAMPLE & HOLD PULSE OUTPUT LE & HOLD PULSE OUTPUT			×۷
PG SUB HP							L	
PG SUB HP HD			: CLA					
PG SUB HP				MP PULSE OUTF BLANKING PULS				
PG SUB HP HD LP BLK			: PRE	BLANKING PULS	SE OUTPUT .			
PG SUB HP HD LP BLK V1.	XV3		: PRE : FLA : CLO	BLANKING PULS G CK OUTPUTS FO	OR INTERFACE			
PG SUB HP HD LP BLK S V1.			: PRE : FLA : CLO : REA	BLANKING PULS G CK OUTPUTS FO D OUT STOP SI	E OUTPUT . OR INTERFACE GNAL INPUT			
PG SUB HP HD LP BLK S V1. TSG ST.	TEST		PRE FLA CLO REA TES	BLANKING PULS G CK OUTPUTS FO	E OUTPUT OR INTERFACE GNAL INPUT INPUTS			



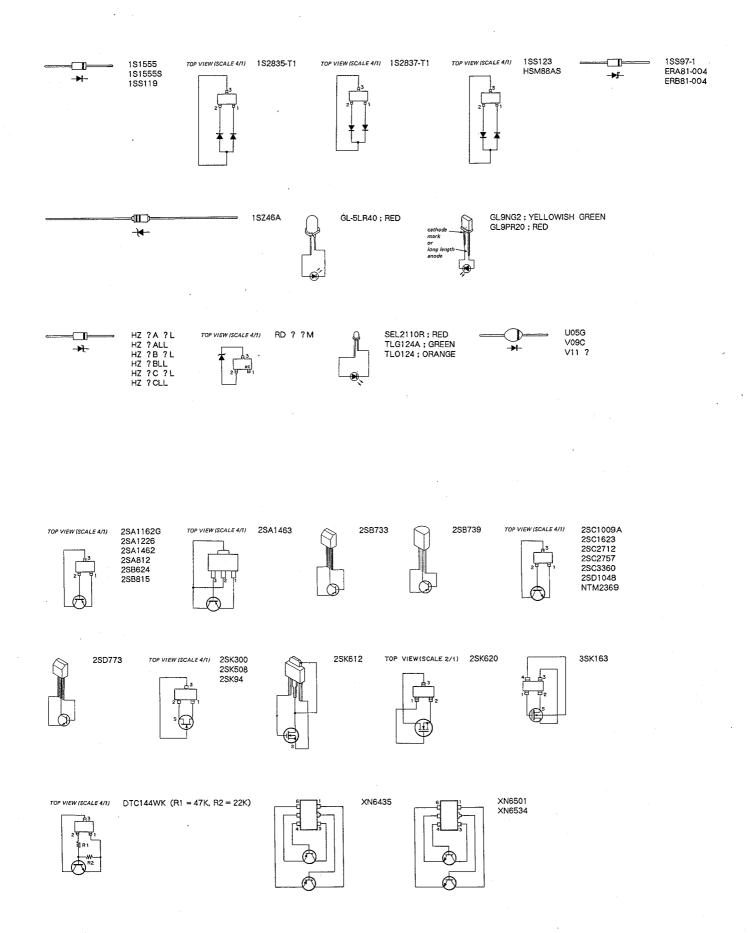




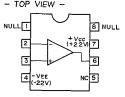
SECTION B SEMICONDUCTOR

The circuit diagram of IC is obtained from the IC data book published by the manufacturer. $\begin{tabular}{ll} \hline \end{tabular}$

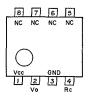
•					
TYPE	PAGE	TYPE	PÄGE	TYPE	PAGE
1\$1555 1\$1555-\$ 1\$2835 1\$2837	.B-2 .B-2	CX22017 CX518 CX7930A CX7968A	.B-6 .B-6	SN74HC244NS. SN74HC574NS. TC4011BF	.B-18
1SS119 1SS123 1SS97	.B-2	CX7969	.B-10	TC4023BF TC4049BF TC4051BFHB TC4053BF	.B-18 .B-18 .B-18
1SZ46A	.B-2	CXD1251Q CXD8002		TC4053BFHB TC4066BFHB TC4069UBF	.B-19
2SA1162G 2SA1226 2SA1462	.B-2 .B-2	DTC144WK ERA81-004	.B-2	TC4081BF TC4538BF	.B-19 .B-19
2SA1463 2SA812		ERB81-004 GL9NG2		TC40H241F TC4S01F	
2SB624 2SB733 2SB739	.B-2	GL9NG2 GL9PR20 GL-5LR40	.B-2	TC4S30F TC4S69F	.B-19 .B-19
2SB815		HA11423MP	.B-14	TC504013BF	
2SC1009A 2SC1623 2SC2712 2SC2757 2SC3360	.B-2 .B-2 .B-2	HD6305Y0D 25P HD74AC04P-R. HSM88AS	.B-15	TC50H001F TC74HC02F TC74HC04F TC74HC4066F. TC74HC4538F. TC74HC574F	.B-20 .B-20 .B-20 .B-19
2SD1048 2SD773	.B-2 .B-2	HZ?A?L HZ?ALL HZ?B?L	.B-2	TC7S04F	.B-20
2SK300 2SK508 2SK612 2SK620 2SK94	.B-2 .B-2 .B-2	HZ?BLL HZ?C?L HZ?CLL LB1423	.B-2 .B-2	TL0124 TL494CNS TL7700CPS	.B-20
3SK163	.B-2	LM2903M		TLC27L2CPS	
AD707JR	.B-3	LM2904M LM35DZ		TLC27L4CNS	
AN6701S	. B-3	MB7114LPF	.B-16	TL062CPS	
BH1210 BH1211 BH1212A BH1213 BH1214	.B-3 .B-3 .B-3	MC74HC4053F. MN1237AD	.B-16	TL064CNS TL068CLP TL082CPS TL084CNS	.B-21 .B-20 .B-21
BH1215A BH1216	.B-4 .B-4	MP7523JN NTM2369		V11N V09C	
BH1217 BH1218 BH1219A BH1220	. B-4 . B-4 . B-4	RC1496M		XN6435 XN6501 XN6534	.B-2
BH1221		SBX1516		μ05G	.B-2
BX1179 BX1338 BX1339A BX1356	.B-5 .B-5	SBX1525 SBX1588 SEL2110R	.B-17	μPC311G2 μPC358G2 μPC812G2	.B-22
				μPD27C256AG. -15	.B-22

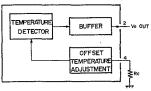


AD707JR (ANALOG DEVICES) FLAT PACKAGE OPERATIONAL AMPLIFIER - TOP VIEW -



AN6701S (MATSUSHITA) FLAT PACKAGE TEMPERATURE SENSING - TOP VIEW -

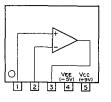




Rc: RESISTOR FOR CALIBRATION

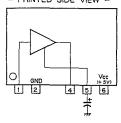
BH1210 (SONY)

VIDEO AMPLIFIER
- PRINTED SIDE VIEW -

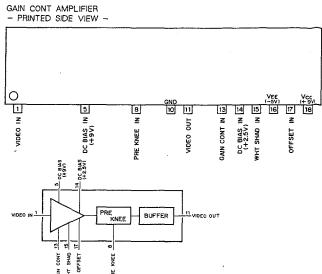


BH1211 (SONY)

VIDEO DRIVER - PRINTED SIDE VIEW -



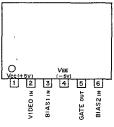
BH1212A (SONY)

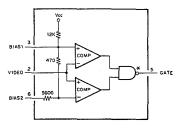


BH1213 (SONY)

VIDEO LEVEL DETECTOR - PRINTED SIDE VIEW -

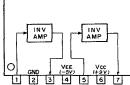
GAIN





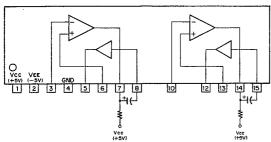
BH1214 (SONY)

DUAL VIDEO INV. AMPLIFIER - PRINTED SIDE VIEW -



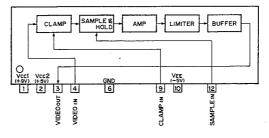
BH1215A (SONY)

VIDEO AMPLIFIER AND DRIVER - PRINTED SIDE VIEW --



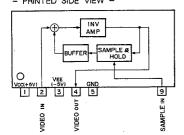
BH1219A (SONY)

VIDEO DC CONVERTER - PRINTED SIDE VIEW -



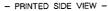
BH1216 (SONY)

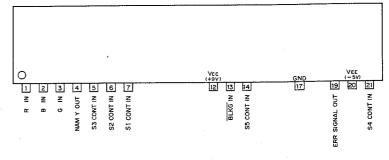
VIDEO AMPLIFIER WITH CLAMP - PRINTED SIDE VIEW -



BH1220 (SONY)

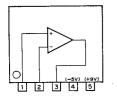
VIDEO SWITCHER AND ERROR SIGNAL GENERATER
- PRINTED SIDE VIEW -





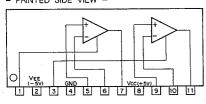
BH1217 (SONY)

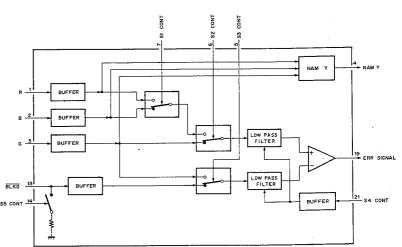
VIDEO AMPLIFIER - PRINTED SIDE VIEW -



BH1218 (SONY)

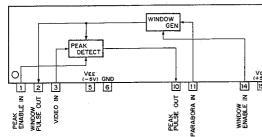
VIDEO AMPLIFIER
- PRINTED SIDE VIEW -





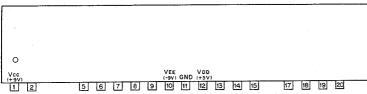
BH1221 (SONY)

SAMPLE PULSE GENERATOR - PRINTED SIDE VIEW -



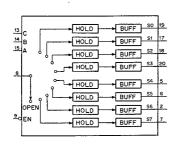
BX1179 (SONY)

8-CHANNEL SELECTABLE SAMPLING HOLDER - PRINTED SIDE -



OUT

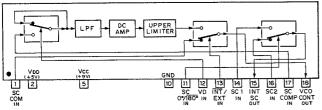
EN	С	8	Α	"ON" CHANNEL
0	0	0	0.	S0
0	0	0	1	S1
0	0	1	0	S2
0	0	1	1	S3
0	1	0	0	54
0	1	0	1	S5
0	1	_ 1	0	S6
0	1	. 1	1	S7
1	X	X	Х	OPEN
				O:LOW LEVEL 1:HIGH LEVEL X:DON'T CARE



WINDOW ENABLE IN

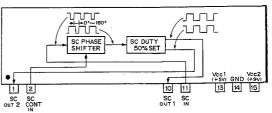
BX1338 (SONY)

APC AMPLIFIER AND SC 0° /180° SELECTOR - REAR VIEW -



BX1339A (SONY)

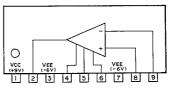
SC PHASE SHIFTER - REAR VIEW -



BX1356 (SONY)

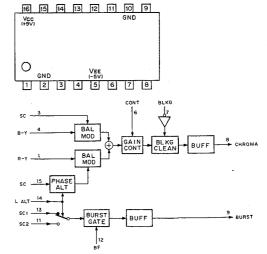
VIDEO OUTPUT AMPLIFIER

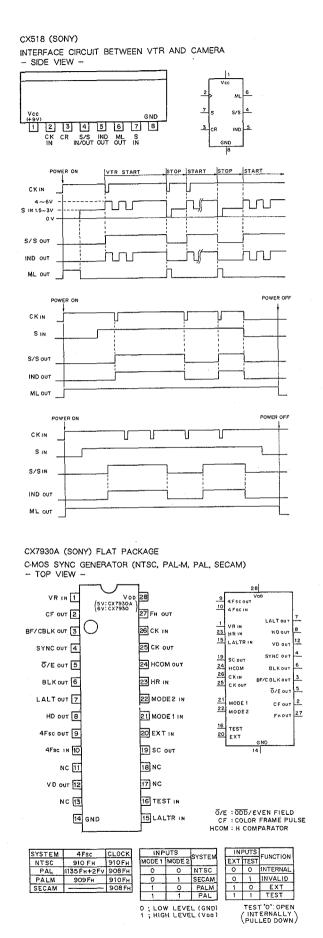
- PRINTED SIDE -

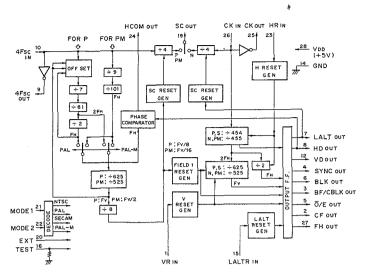


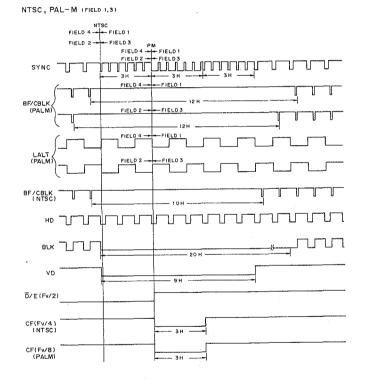
CX22017 (SONY)

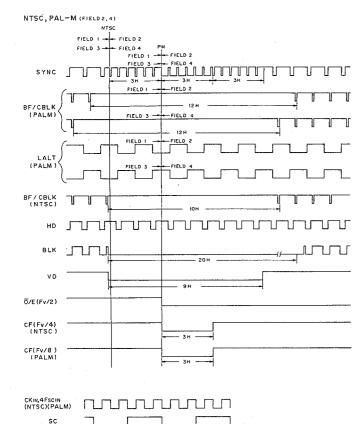
VIDEO SIGNAL PROCESSOR - TOP VIEW -

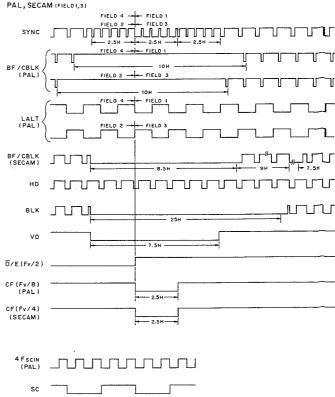


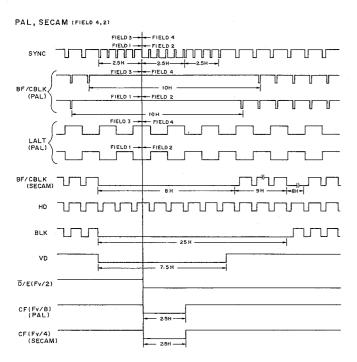


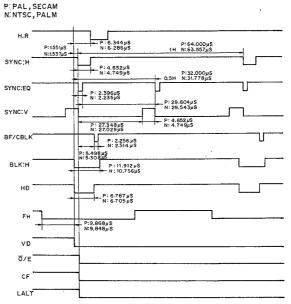


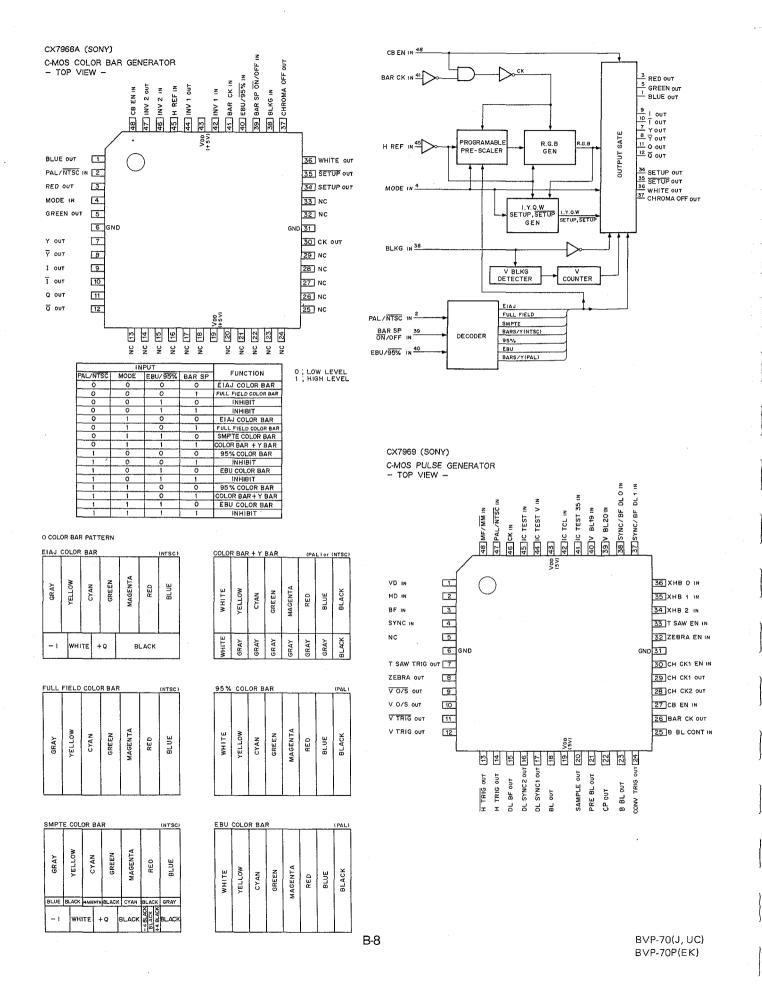












IGNATION
SYSTEM
313121
PAL, SECAM
NTSC, PALM

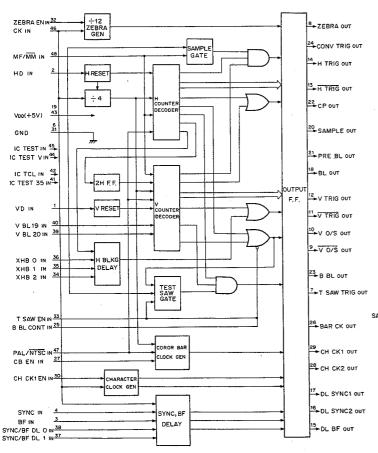
2. TYPE OF TUBE					
INPUT	FUNCTION				
MF/MM IN	10.00.00				
1	MAG-STA TUBE				
0	MAG -MAG TUBE				

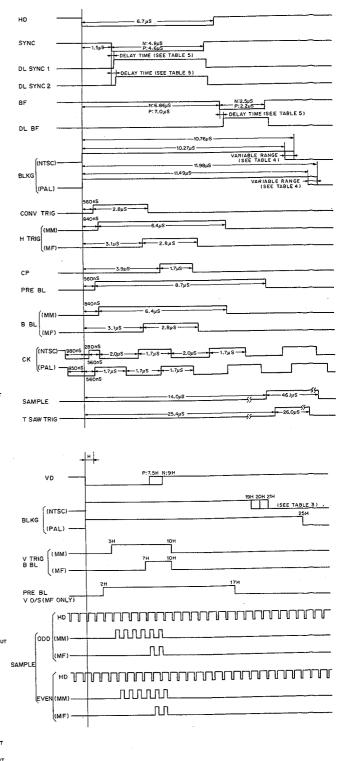
3.V BL	G WIDT	TH (NTSC ONLY
INP		V BLKG WIDTH
V BL 19	V BL 20	V BLKG WIDTH
1	X	19H
0	1	20H
0	0	21 H

4. H	BLKG	WIDT	н	
	NPUT		BLKG W	DTH (μS)
XH82	XHB1	хнво	NTSC	PAL
1	1	1	10.27	11.49
1	1	0	10.34	11.56
1	0	1	10.41	11.63
1	0	0	10.48	11,70
0	1	1	10.55	11.77
0	1	0	10.62	11.84
0	0	1	10.69	11.91
0	0	0	10.76	11.98

5. DELAY	TIME			
INF	υT	DELA	Y TIME (S)
SYNC/BF DL1	SYNC/BF DL2	DL SYNC 1	DL SYNC 2	OL BF
1	1 .	140	210	140
1	0	210	280	210
0	1	630	700	630
0	0	700	770	700

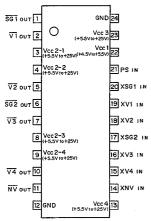
1; HIGH LEVEL O; LOW LEVEL X; DON'T CARE



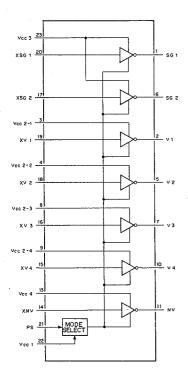


CXA1065M (SONY) FLAT PACKAGE

INVERTING DRIVER FOR CCD CLOCK WITH POWER SAVE - TOP VIEW -



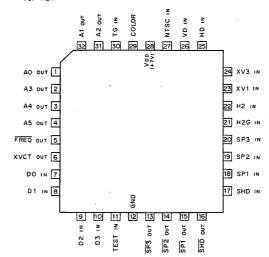
XV1-XV4; VERTICAL REGISTER TRANSMISSION CLOCK INPUT VI - V4; VERTICAL REGISTER TRANSMISSION CLOCK OUTPUT XSG; XSG2; SENSER GATE PULSE INPUT SGI, SG2; SENSER GATE PULSE OUTPUT XNV; DRIVER OUTPUT NV; DRIVER OUTPUT PS; POWER SAVE INPUT Vcc1; BIAS VOLTAGE Vcc2-1; VI OUTPUT PULSE VOLTAGE Vcc2-1; VI OUTPUT PULSE VOLTAGE Vcc2-2; VI OUTPUT PULSE VOLTAGE Vcc2-4; VI OUTPUT PULSE VOLTAGE Vcc2-4; VI OUTPUT PULSE VOLTAGE Vcc3; SGI, SG2 OUTPUT PULSE VOLTAGE Vcc4; NV OUTPUT PULSE VOLTAGE Vcc4; NV OUTPUT PULSE VOLTAGE



CXD1251Q (SONY)

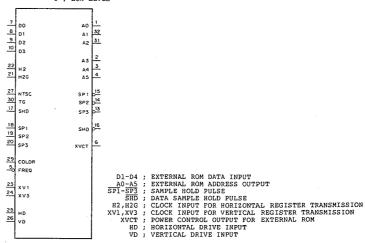
C-MOS TIMING CONTROLLER

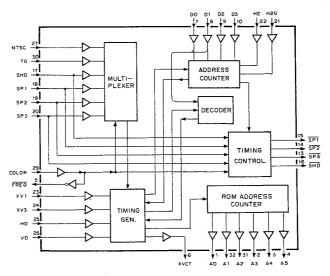
- TOP VIEW -



MODE S	ELECTION	
	1	0
NTSC	CCIR MODE	NTSC MODE
COLOR	B/W MODE	COLOR MODE
TG	IC FOR TG:	IC FOR TG:
16	CXD1149 USE	CXD1155/1156 USE

1 ; HIGH LEVEL 0 ; LOW LEVEL





B-10

BVP-70(J, UC) BVP-70P(EK)

CXD8002 (SONY) C-MOS TIMING PULSE GENERATOR FOR CCD - TOP VIEW -442 HTSG IN
42 HTSG IN
41 08 IN
40 03 IN
53 RST IN
53 CLP OUT
55 XSUB OUT V00 (+5V) CLK OUT 1 32 XST3 00T SHP out 2 31 XST2 OUT XPG OUT 4 29 XIM4 OUT XH1 out 5 28 XIM 3 OUT 27 XIM2 OUT 26 XIM1 OUT D2 IN 8 25 XSG2 0UT D5 IN 9 24 XSG1 out D6 IN 10 23 CL 0UT D7 IN 11

XV1 out XV3 out

FS OUT

CK in XCK out CP in HD in VD in

	LOW LEVEL		EL	н	GH LEVEL
D1	CCIR				EIA
D2	FRAME				FIELD
нит	TER S	PEED	SE	EL8	ECT.
D4	D5	D6	D	7	SHUTTER SPEED (sec)
0	0	0	1	_	OFF
0	0	1	1		1/125
0	1	0	1		1/250
0	1	1	1	-	1/500
1	0	0	1		1/1000
1	0	1	1		1/2000
1	1	0	ī		1/4000
1	1	1	1	_	1/10000
х	×	х	C)	1/100 (EIA) 1/60 (CCIR)

0 : LOW LEVEL 1 : HIGH LEVEL X : DON'T CARE

CK : CLOCK INPUTS

XCK : INVERTED CLOCK OUTPUT

CLK. CL : CLOCK OUTPUTS

HD : HORIZONTAL DRIVE INPUT

VD : VERTICAL DRIVE INPUT

VSGI_XSG2 : CLOCK OUTPUTS FOR READ OUT FROM IMAGE SENSOR

XIMI - XIM4 : CLOCK OUTPUTS FOR SENSOR REGISTOR DRIVE OF CCD

XSTI - XST4 : CLOCK OUTPUTS FOR STORAGE REGISTOR DRIVE OF CCD

XST - VERTICAL DRIVER POWER SAVE PULSE OUTPUT

XH1 XH2 : HORIZONTAL REGISTOR TRANSMISSION CLOCK OUTPUTS

XPG : PRE-CHARGE GATE PULSE OUTPUT

XSUB : ELECTRIC CHARGE DISCHARGING PULSE OUTPUT

SHP : PRE-CHARGE LEVEL SAMPLE & HOLD PULSE OUTPUT

SHP : PRE-CHARGE LEVEL SAMPLE & HOLD PULSE OUTPUT

CLP : CLAMP PULSE OUTPUT

PBLK : PRE-BLANKING PULSE OUTPUT

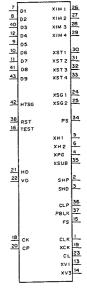
FS : FLAG

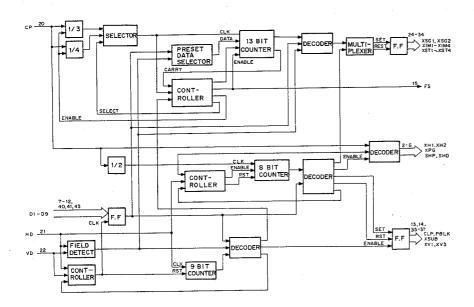
XV1, XV3 : CLOCK OUTPUTS FOR INTERFACE

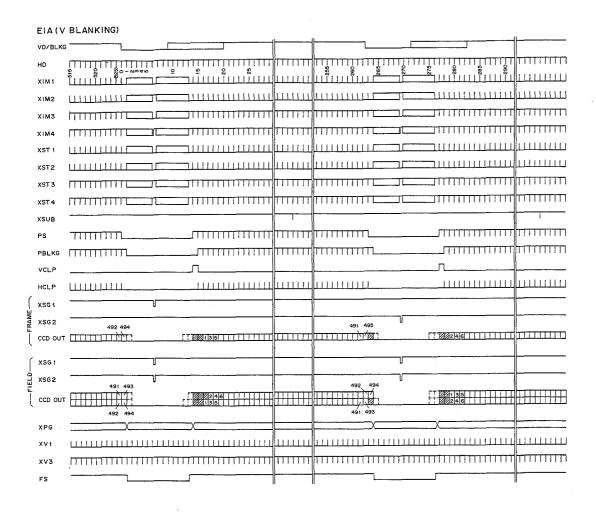
HTSG : READ OUT STOP SIGNAL INPUTS

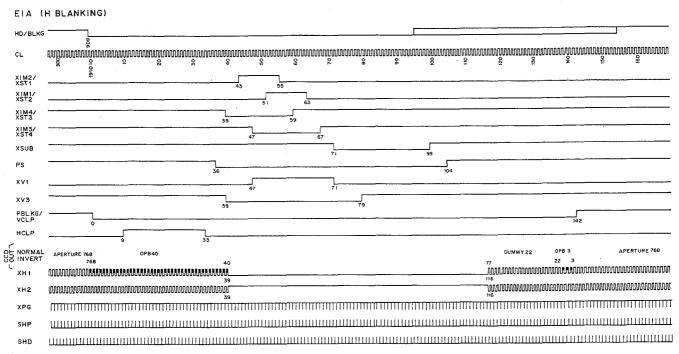
D1 - D3, D8, D9 : MODE SELECT SIGNAL INPUTS

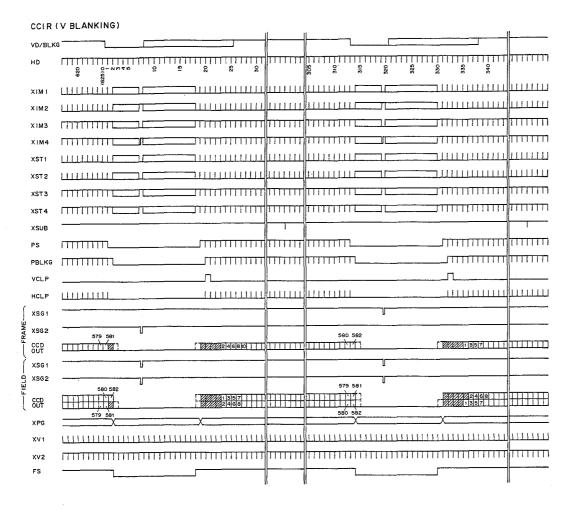
D4 - D7 : SHUTTER SPEED MODE SIGNAL INPUTS

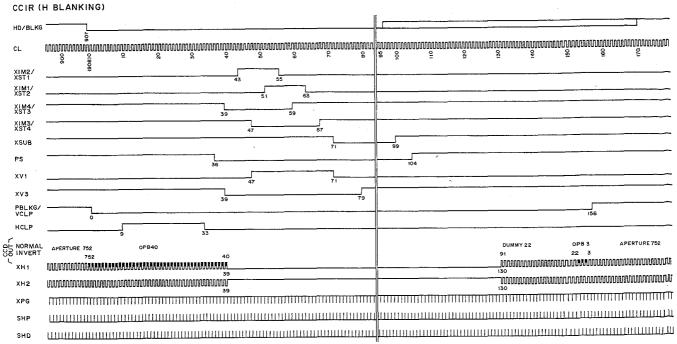




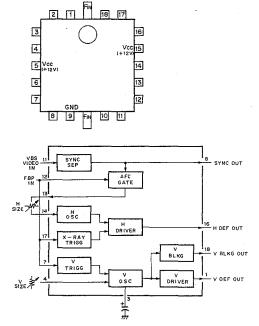






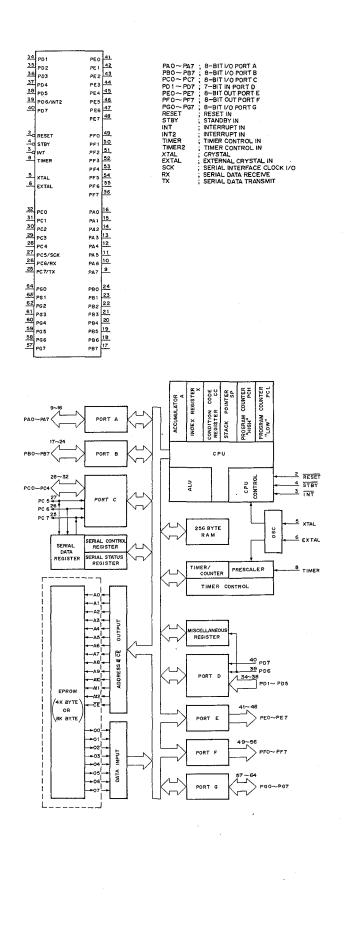


HA11423MP (HITACHI) FLAT PACKAGE TV H/V SYNC SIGNAL PROCESSOR - TOP VIEW --



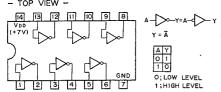
HD6305Y0D25P (HITACHI) (INSTRUCTION CYCLE = 1uS ; $f_{\rm CK}$ = 4MHz) C-MOS 8-BIT MICROPROCESSOR UNIT — TOP VIEW —

回 64 PGO 1/O 63 PG1 1/0 RESET IN 2 INT IN 3 62 PG2 1/0 STBY IN 4 61 PG3 I/O 60 PG4 1/0 59 PG5 1/0 XTAL IN 5 EXTAL IN 6 7 Y992 58 PG6 1/0 TIMER IN 8 57 PG7 1/0 PA7 1/0 9 56 PF7 OUT PA6 1/0. 10 55 PF6 OUT PA5 1/0 11 54 PF5 OUT PA4 1/0 12 53 PF4 OUT PA3 1/0 13 52 PF3 OUT PA2 1/0 4 51 PF2 OUT PA1 1/0 15 50 PF1 OUT 49 PFO OUT PAO 1/0 16 PB7 1/0 17 PB6 I/O 18 PE6 OUT 46 PE5 OUT PB5 I/O 19 PB4 1/0 20 P83 I/O 21 44 PE3 OUT 43 PE2 OUT 42 PE1 OUT PB2 1/0 22 PB1 1/0 23 PBO 1/0 24 41 PEO OUT Tx OUT/PC7 I/O 25 40 PD7 IN 39 PD6 IN/INTZ IN Rx IN/PC6 I/O 26 SCK 1/0/PC5 1/0 27 38 PD5 IN PC4 1/0 28 37 PD4 IN PC3 1/0 29 36 PD3 IN 35 PD2 IN PC2 1/0 30 PC1 I/0 31 34 PDI IN PCO 1/0 32 Vpp133



HD74AC04P-R (HITACHI)

C-MOS INVERTER - TOP VIEW --

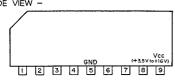


LM2903M (RAYTHEON) FLAT PACKAGE VOLTAGE COMPARATOR — TOP VIEW —



LB1423N (SANYO)

LED DRIVER FOR AC/DC LEVEL METER - SIDE VIEW -



LM2904M (NSC) FLAT PACKAGE OPERATIONAL AMPLIFIER - TOP VIEW -

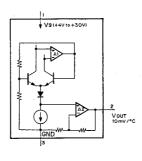


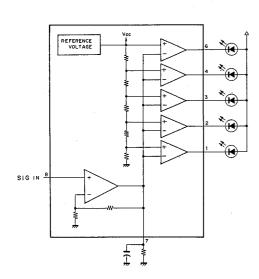
LM35DZ (NATIONAL)



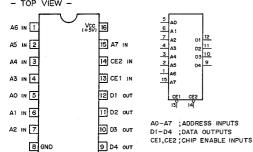


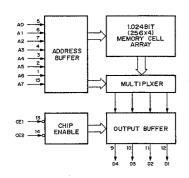




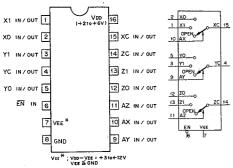


MB7114LPF (FUJITSU) (ACCESS TIME = 50nS) FLAT PACKAGE 1024-BIT (256x4) PROM - TOP VIEW -





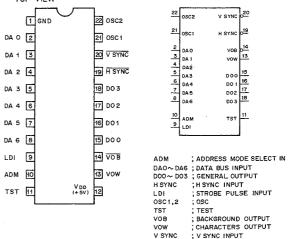
MC74HC4053F (MOTOROLA) FLAT PACKAGE C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER - TOP VIEW -

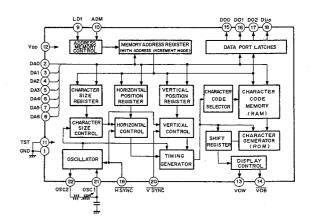


| CONT.INPUTS | O N | EN | A (X;Y,Z) | CHANNEL |
0; LOW LEVEL | 0 | 0 | 0 |
1; HIGH LEVEL | X; DON'T CARE. | 1 | X | OPEN

MN1237AD (MATSUSHITA)

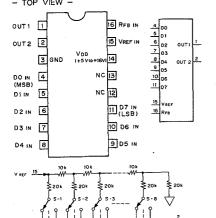
C-MOS INDICATES DATA OF 60 CHARACTERS CRT INTERFACE - TOP VIEW -



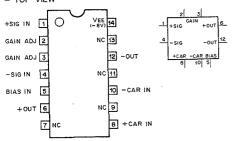


ABCDEFGHIJ KLMNDPQRST UVWXYZ 0123456789 MP7523JN (MICRO POWER SYSTEMS)

C-MOS 8-BIT D/A CONVERTER - TOP VIEW -

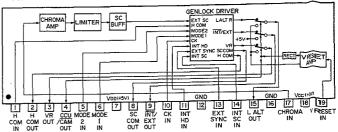


RC1496M (RAYTHEON) FLAT PACKAGE BALANCED MODULATOR/DEMODULATOR - TOP VIEW -



SBX1525 (SONY)

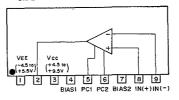
SC LIMITER AND GENLOCK DRIVER - PRINTED SIDE VIEW -



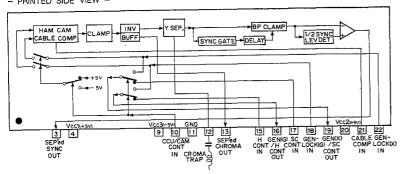
FIANCIL								
MODEI MODE2 MODE								
1	1	NTSC						
O O PAL								

SBX1588 (SONY)

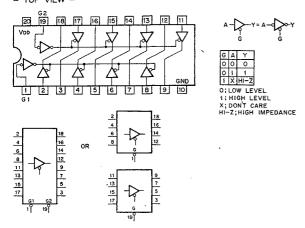
VIDEO AMPLIFIRE - SIDE VIEW -



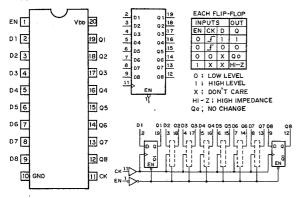
SBX1516 (SONY) SYNC SEPARATOR
- PRINTED SIDE VIEW -



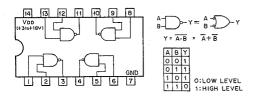
SN74HC244NS (TI) ($V_{00} = +2$ to +6V) FLAT PACKAGE C-MOS BUS BUFFER WITH 3-STATE OUTPUTS - TOP VIEW -



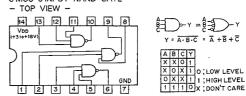
SN74HC574NS (TI) (V $_{00}$ = + 2 to + 6V) FLAT PACKAGE TC74HC574F (TOSHIBA) (V $_{00}$ = + 2 to + 6V) FLAT PACKAGE C-MOS 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP - TOP VIEW -



TC4011BF (TOSHIBA) FLAT PACKAGE C-MOS 2-INPUT NAND GATE - TOP VIEW -



TC4023BF (TOSHIBA) FLAT PACKAGE C-MOS 3-INPUT NAND GATE

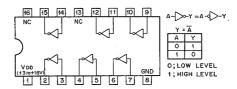


5

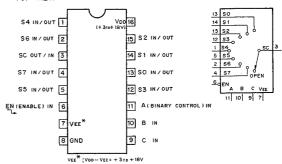
141

11

TC4049BF (TOSHIBA) FLAT PACKAGE C-MOS INVERTING TYPE BUFFER/CONVERTER - TOP VIEW -



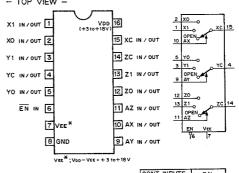
TC4051BFHB (TOSHIBA) FLAT PACKAGE C-MOS 8-CHANNEL MULTIPLEXER/DEMULTIPLEXER



	"ON" CHANNEL	Α	8	O	ΕN
	0	0	0	0	0
	1	1	0	0	0
	2	0	. 1	0	0
	3	1	1	0	0
	4	0	0	1	0
	5	1	0	1	0
O; LOW LEVEL	6	0	1	1	0
1 : HIGH LEVEL	7	1	1	1	0
X; DON'T CARE	OPEN	X	Х	Х	1

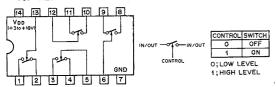
TC4053BF (TOSHIBA) FLAT PACKAGE TC4053BFHB (TOSHIBA) FLAT PACKAGE

C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER - TOP VIEW -

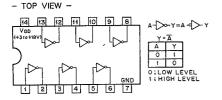


	CONT	r. INPUTS	ON
	ĒŃ	A (X,Y,Z,)	CHANNEL
O: LOW LEVEL	0	0	0
1 . HIGH LEVEL	0	1	1
X DON'T CARE.	1	X	OPEN

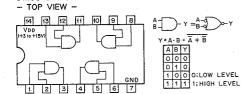
TC4066BFHB (TOSHIBA) FLAT PACKAGE C-MOS BILATERAL ANALOG SWITCH - TOP VIEW -



TC4069UBF (TOSHIBA) FLAT PACKAGE C-MOS INVERTER



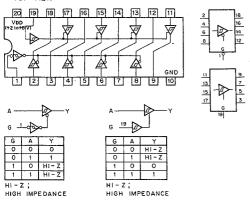
TC4081BF (TOSHIBA) FLAT PACKAGE C-MOS 2-INPUT AND GATE



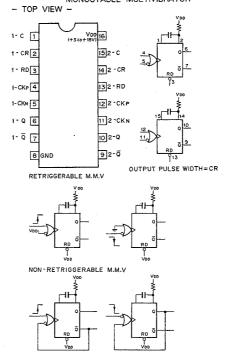
TC40H241F (TOSHIBA) FLAT PACKAGE

C-MOS 3-STATE SCHMITT TRIGGER BUFFER/LINE DRIVER

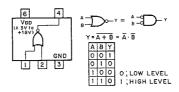
- TOP VIEW -



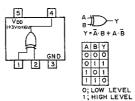
TC4538BF (TOSHIBA) FLAT PACKAGE TC74HC4538F (TOSHIBA) FLAT PACKAGE C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR



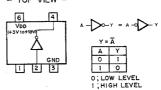
TC4S01F (TOSHIBA) FLAT PACKAGE C-MOS 2-INPUT NOR GATE -- TOP VIEW -



TC4S30F (TOSHIBA) FLAT PACKAGE C-MOS EXCLUSIVE OR GATE - TOP VIEW -



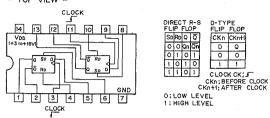
TC4S69F (TOSHIBA) FLAT PACKAGE C-MOS INVERTER BUFFER -- TOP VIEW -



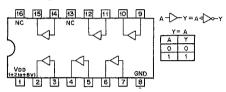
TC504013BF (TOSHIBA) FLAT PACKAGE

C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET

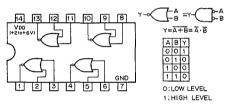
- TOP VIEW -



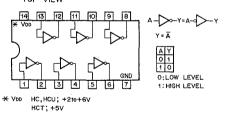
TC50H001F (TOSHIBA) FLAT PACKAGE
C-MOS NON-INVERTING TYPE BUFFER/CONVERTER
- TOP VIEW -



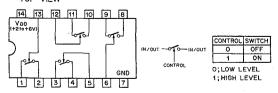
TC74HC02F (TOSHIBA) FLAT PACKAGE C-MOS 2-INPUT POSITIVE-NOR GATE - TOP VIEW -



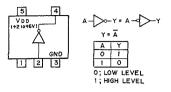
TC74HC04F (TOSHIBA) FLAT PACKAGE C-MOS INVERTER - TOP VIEW -



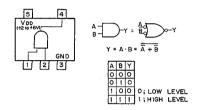
TC74HC4066F (TOSHIBA) FLAT PACKAGE C-MOS BILATERAL ANALOG SWITCH - TOP VIEW --



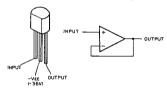
TC7S04F (TOSHIBA) FLAT PACKAGE C-MOS INVERTER - TOP VIEW -



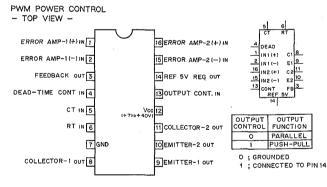
TC7S08F (TOSHIBA) FLAT PACKAGE C-MOS 2-INPUT AND GATE - TOP VIEW -

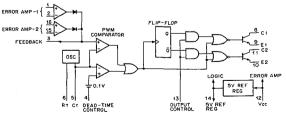


TL068CLP (TI)
J-FET INPUT BUFFER AMPLIFIER



TL494CNS (TI) FLAT PACKAGE

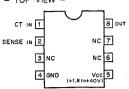




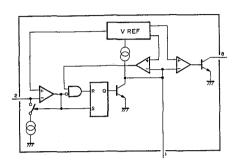
TL7700CPS (TI) FLAT PACKAGE

VARIABLE SUPPLY VOLTAGE SUPERVISOR

TOP VIEW —



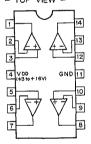




TLC27L2CPS (TI) FLAT PACKAGE OPERATIONAL AMPLIFIER - TOP VIEW -



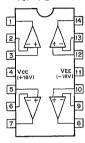
TLC27L4CNS (TI) FLAT PACKAGE
C-MOS OPERATIONAL AMPLIFIER



TL062CPS (TI) FLAT PACKAGE OPERATIONAL AMPLIFIER (JFET INPUT) — TOP VIEW —



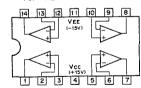
TLO64CNS (TI) FLAT PACKAGE
OPERATIONAL AMPLIFIER
(J FET-INPUT)
- TOP VIEW -



TL082CPS (TI) FLAT PACKAGE OPERATIONAL AMPLIFIER (J FET-INPUT) - TOP VIEW -



TL084CNS (TI) FLAT PACKAGE OPERATIONAL AMPLIFIER (J FET-INPUT) - TOP VIEW -



uPC311G2 (NEC) FLAT PACKAGE VOLTAGE COMPARATOR - TOP VIEW -



uPC358G2 (NEC) FLAT PACKAGE DUAL OPERATIONAL AMPLIFIERS - TOP VIEW -



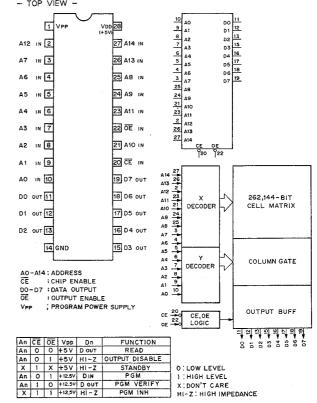
UPC812G2 (NEC) FLAT PACKAGE

OPERATIONAL AMPLIFIER (UFET INPUT)

- TOP VIEW --

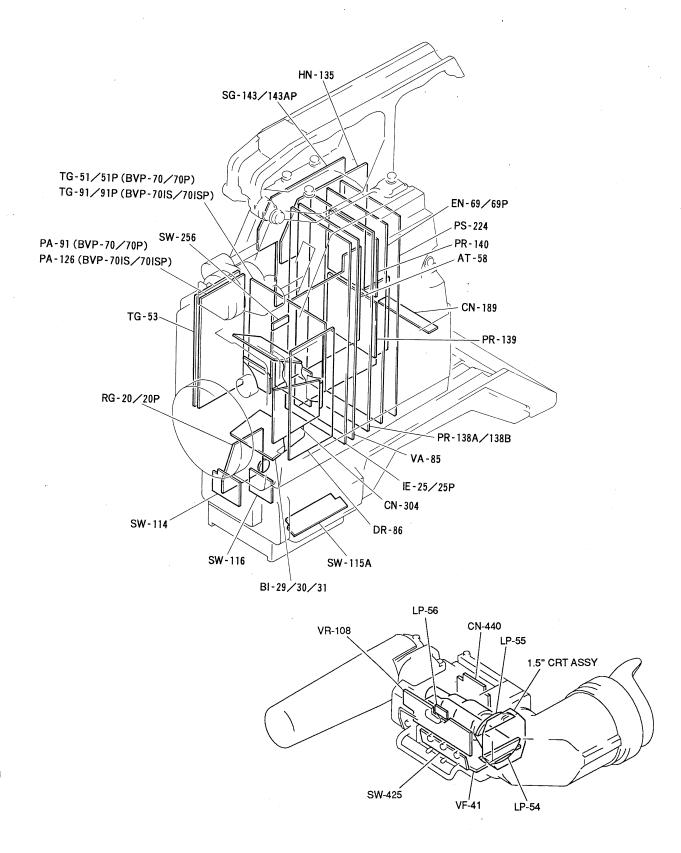


<code>uPD27C256AG-15</code> (NEC) (ACCESS TIME = 150nS) FLAT PACKAGE C-MOS 256K (32K-8) ONE TIME PROM - TOP VIEW -



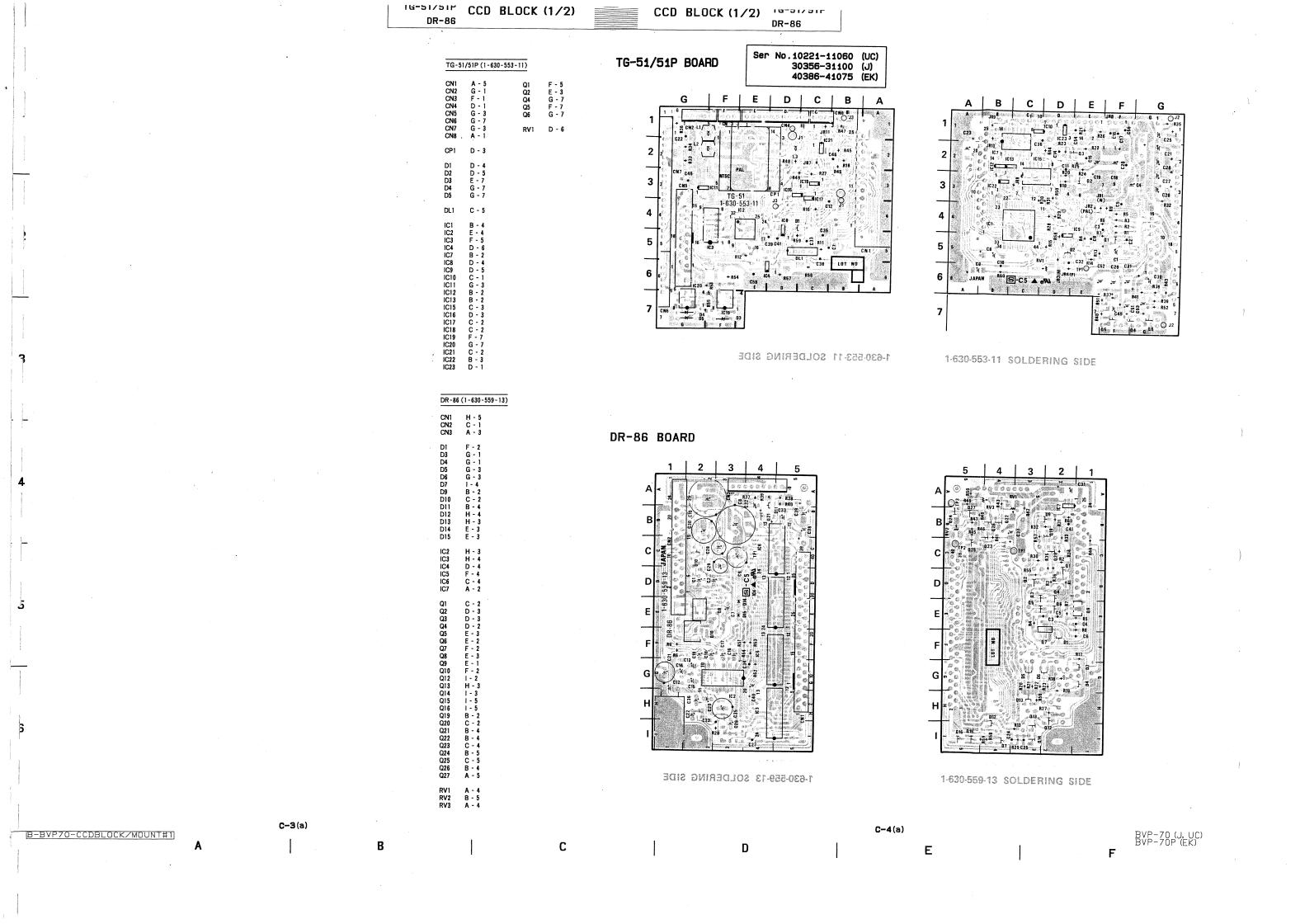
SECTION C SCHEMATIC DIAGRAMS AND BOARD ILLUSTRATIONS

BOARD LAYOUT



BVP-70 (J, UC) BVP-70P (EK)

C-2



BVP-70 (UC) BVP-70 (J) BVP-70P (EK) Ser No.11061-31101-41076-Ser No.11001-11186 BVP-70IS (UC) 31001-31215 BVP-70IS (J) 41001-41262 BVP-70ISP (EK) TG-51/51P BOARD TG-51 (1-630-553-12) JR1 JR3 JR7 JR8 JR9 JR11 CN1 CN2 CN3 CN4 CN5 CN6 CN7 CN8 Ε D C B Q1 Q2 Q3 Q4 Q5 Q6 E - 3 E - 2 G - 7 F - 7 G - 7 CP1 D - 5 TP1 E - 6 IC1 IC2 IC4 IC7 IC8 IC9 IC10 IC11 IC12 IC13 IC15 IC16 IC17 IC18 IC19 IC20 IC21 IC22 IC22 1-630-553-12 SOLDERING SIDE 1-630-553-12 SOLDERING SIDE DR-86 (1-630-559-13) DR-86 BOARD D1 D3 D4 D5 D6 D7 D9 D10 D11 D12 D13 D14 D15 IC2 IC3 IC4 IC5 IC6 IC7 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q12 Q13 Q14 Q15 Q20 Q21 Q22 Q23 Q24 Q25 Q26 Q27 adia suintouda areas sca. RV1 RV2 RV3 A - 4 B - 5 A - 4 C-3(b) B-BVP70-CCDBLOCK/MOUNT#1 BVP-70 (J, UC) BVP-70P (EK) C-4(b)

TG-51/51P DR-86

CCD BLOCK (1/2)

TG-51/51P CCD BLOCK (1/2)

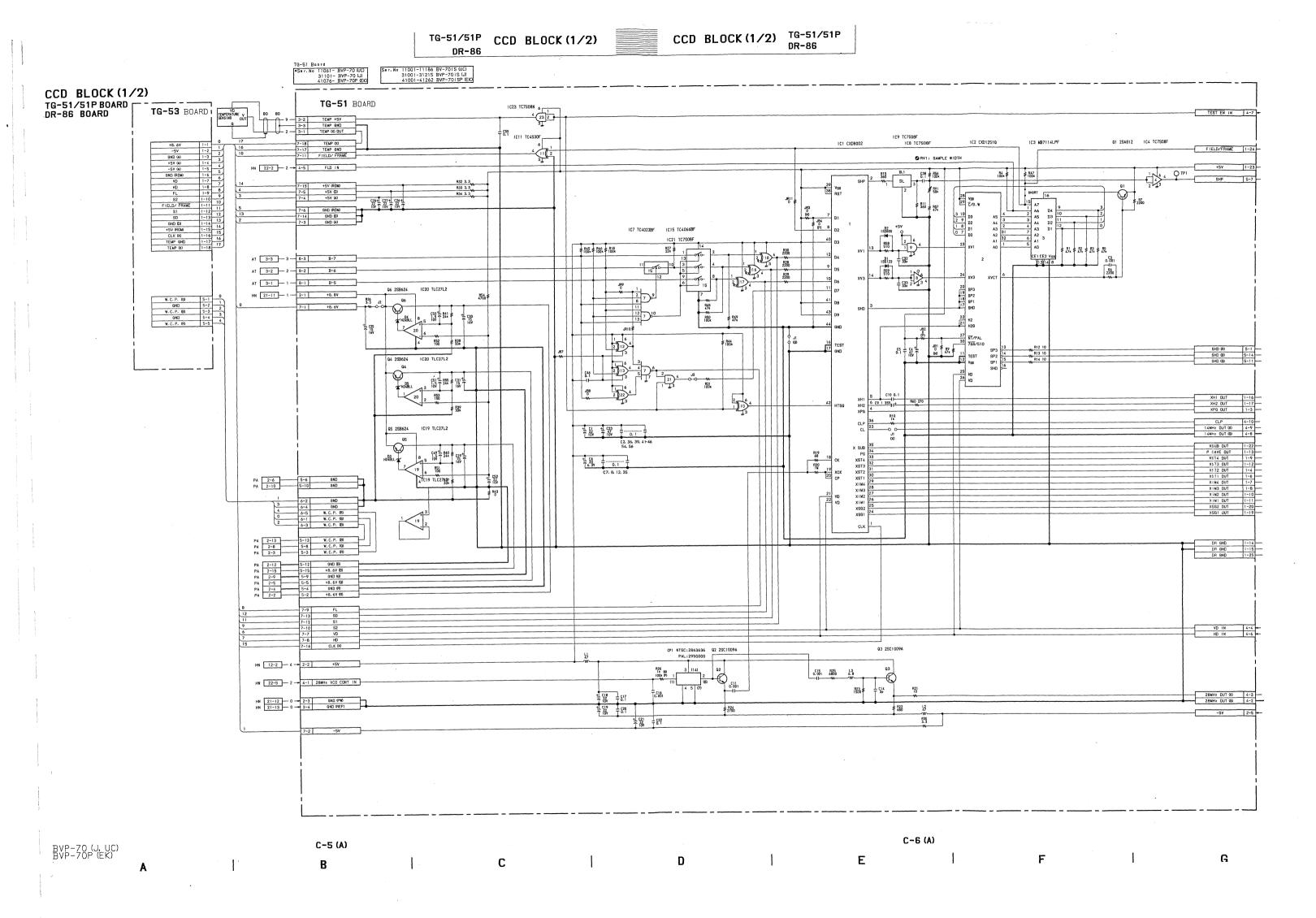
BVP-70IS (UC) BVP-70IS (J) BVP-70ISP (EK) Ser No.11187-31216-TG-91/91P BOARD TG-91 (1-636-340-11) (For BVP-70IS/70ISP) 41263-CN1 CN2 CN3 CN4 CN5 CN6 CN7 CN8 A - 5 G - 1 F - 1 D - 1 G - 3 G - 7 G - 3 B - 1 JR3 JR7 JR8 JR11 JR12 C - 5 C - 5 F - 8 G - 8 G - 8 C - 6 RV1 C - 5 TPI E - 6 IC1 IC2 IC4 IC6 IC7 IC10 IC11 IC12 IC13 IC15 IC16 IC17 IC18 IC19 IC20 IC21 IC22 IC23 IC23 DR-86 (1-630-559-13) 1-636-340-11 SOLDERING SIDE 1-636-340-11 SOLDERING SIDE DR-86 BOARD D1 D3 D4 D5 D6 D7 D9 D10 D11 D12 D13 D14 D15 IC2 IC3 IC4 IC5 IC6 IC7 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q10 Q12 Q13 Q14 Q15 Q20 Q20 Q21 Q22 Q23 Q24 Q25 Q26 Q27 RV1 RV2 RV3 C-3(c) C-4(c) В

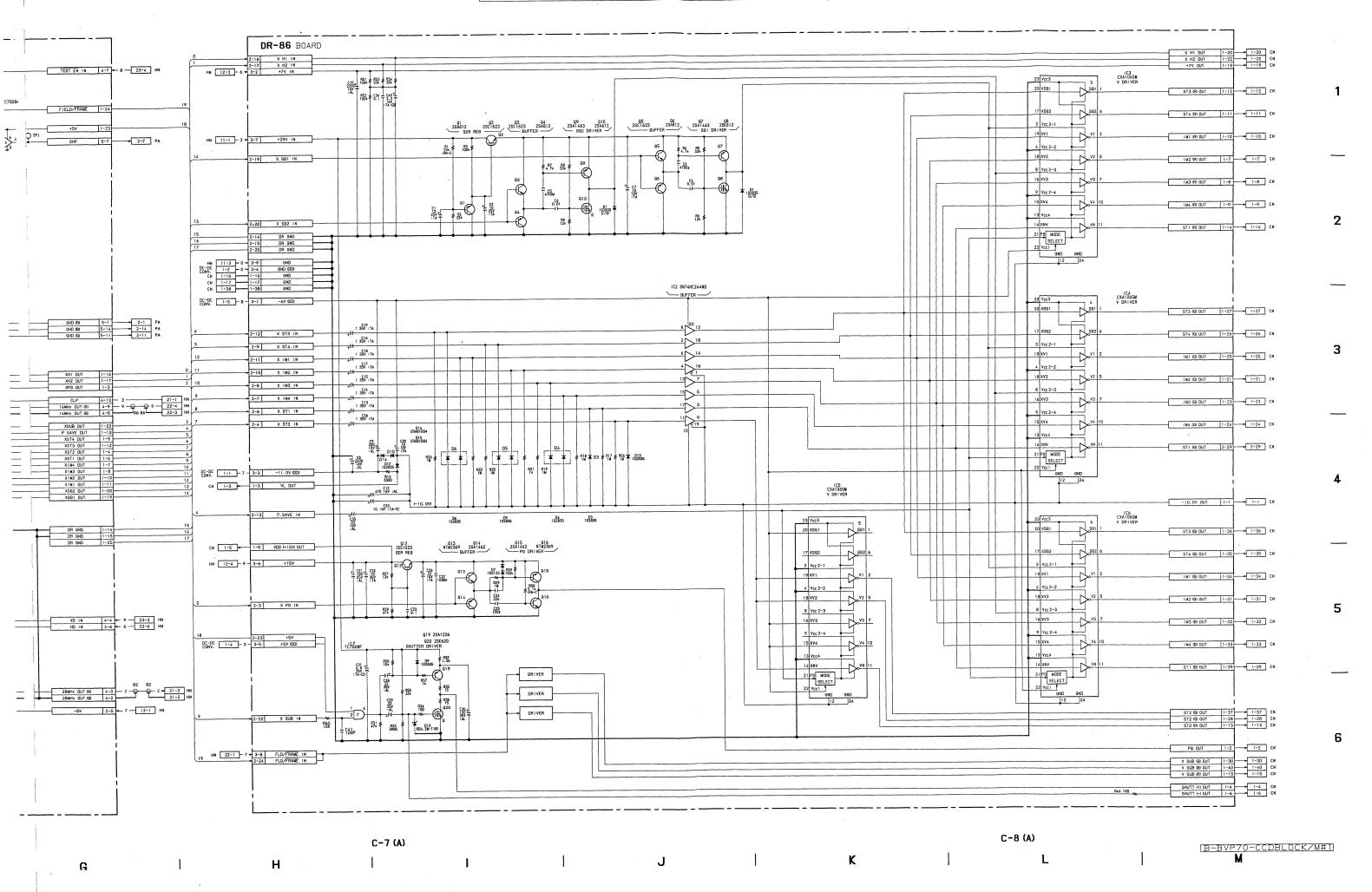
CCD BLOCK (1/2) TG-91/91P DR-86

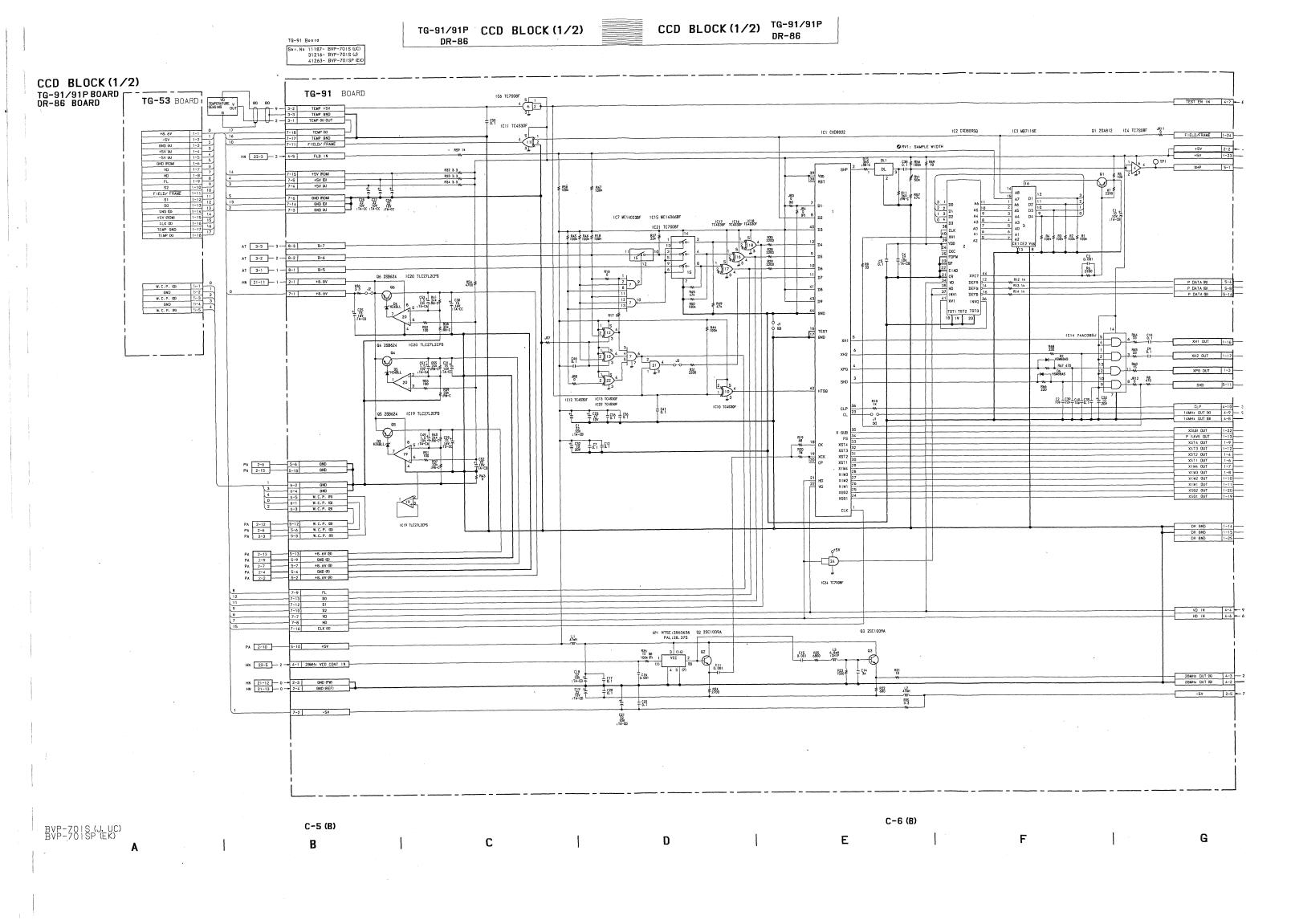
B-BVP70-CCDBLOCK/MOUNT#1

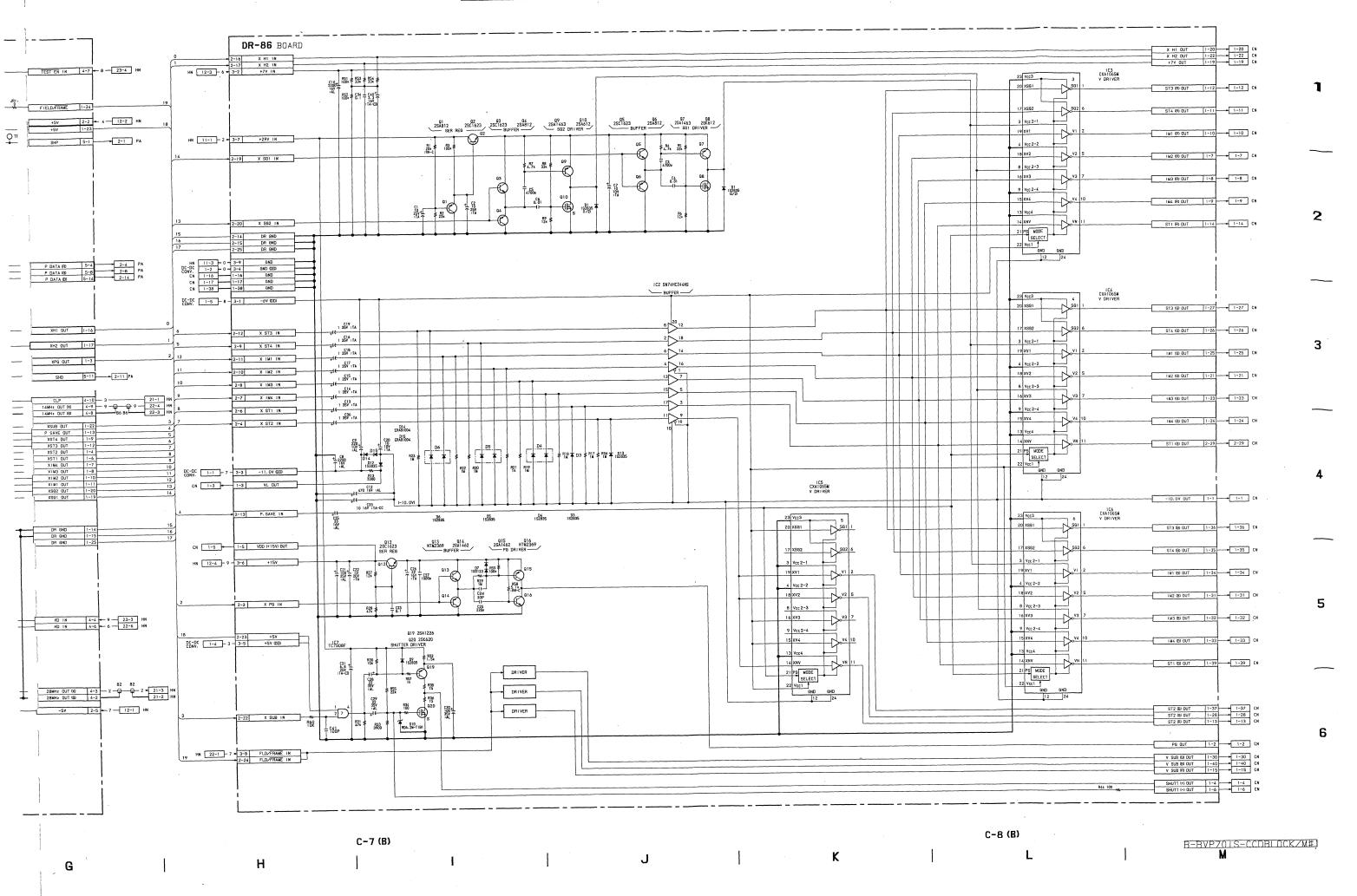
TG-91/91P CCD BLOCK (1/2)

BVP-70 (J, UC) BVP-70P (EK)







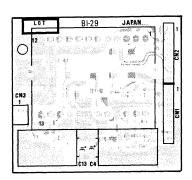


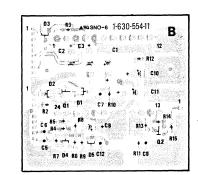
Ser No.10221-11010 (UC) 30356-31060 (J) 40386-40601 (EK)

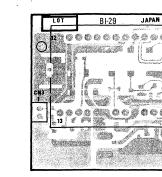
BI-29 BOARD

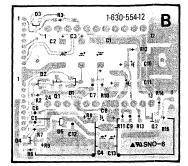
(UC) Ser No.11031-(J) (EK) 31061-41001-

CN-3

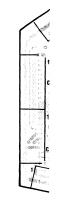








1-630-554-12 SOLDERING SIDE



G SIDE

PA-9

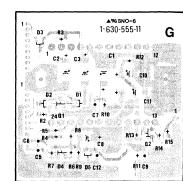
BOILD BOLDERING SIDE

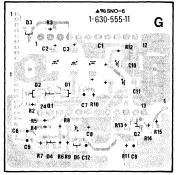
1-630-554-11 SOLDERING SIDE

BI-30 BOARD

LOT B1-30

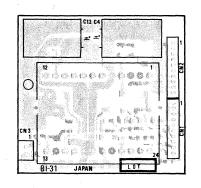
1-630-554-12 SOLDERING SIDE





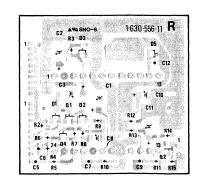
1-630-555-11 SOLDERING SIDE

BI-31 BOARD



AGE DATE SOLDERING SIDE

1-630-555-11 SOLDERING SIDE



1-630-556-11 SOLDERING SIDE

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2	2 T G S T S
3	3 + 4 1 R5 • C CV1 • C F F F
4	4 C2 ≅ 0.48 T R33 + 0 R34 +

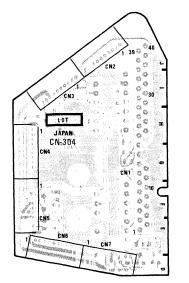
1.630

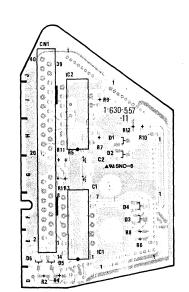
B-BVP70-CCDBLOCK/MOUNT#2

C-10

PA-126 BOARD







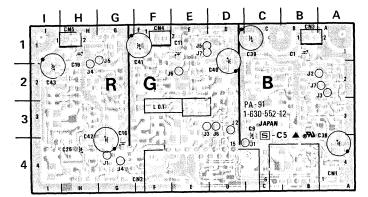
1-630-557/11 SOLDERING SIDE

1-630-557-11 SOUDERING SIDE

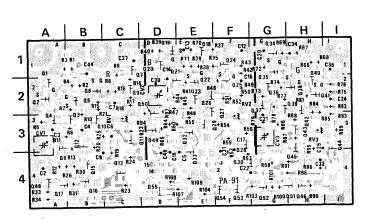
PA-91 BOARD

?r	No . 10221- 30356- 40386-	BVP-70 (UC) BVP-70 (J) BVP-70P (EK)

Ser No.11001-11186 BVP-70IS (UC) 31001-31215 BVP-70IS (J) 41001-41262 BVP-70ISP (EK)



PA-91 (1-630-552-12) CN1 CN2 CN3 CN4 CN5 A - 4 F - 4 B - 1 F - 1 H - 1 Q40 Q41 Q42 Q43 Q44 Q45 Q46 Q49 Q50 Q51 Q52 Q53 Q54 Q55 CV1 CV2 CV3 D - 4 RV1 RV2 RV3

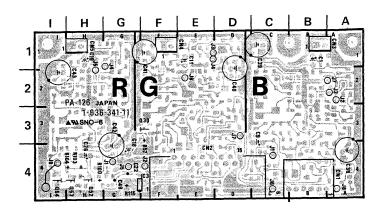




C-11

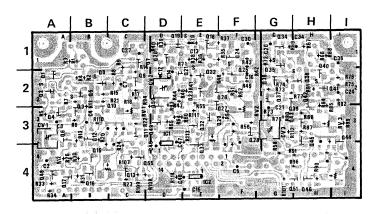
Ser No.11187-(For BVP-70IS/70ISP)

BVP-70IS (UC) BVP-70IS (J) BVP-70ISP (EK)



1-636-341-11 SOLDERING SIDE

31216-41263-



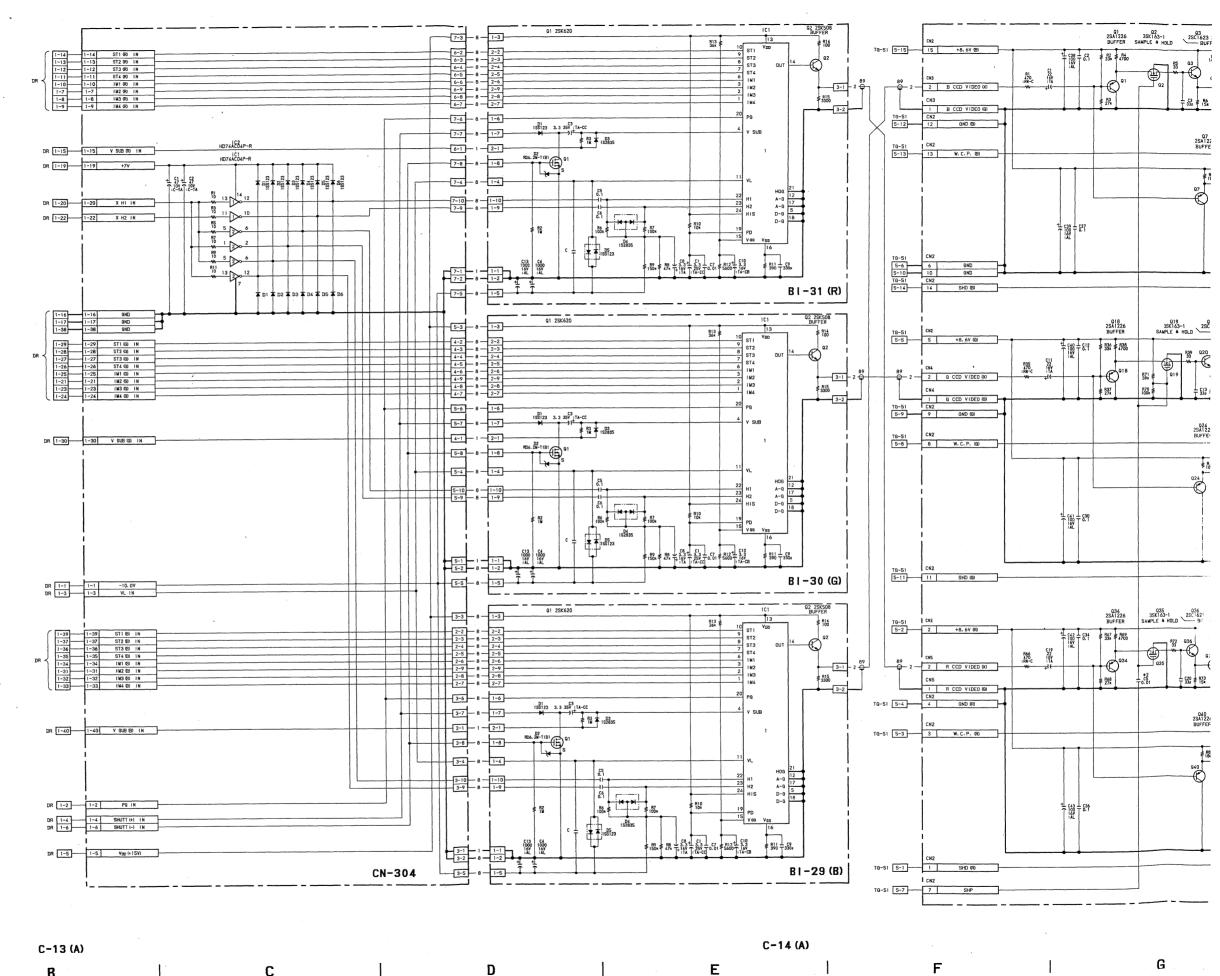
1-636-341-11 SOLDERING SIDE

PA-126 (1-636-341-11) CN1 CN2 CN3 CN4 CN5 A - 4 E - 4 A - 1 E - 1 H - 1 CV1 CV2 A - 3 D - 2 IC1 IC2 IC3 RV1 RV2 RV3

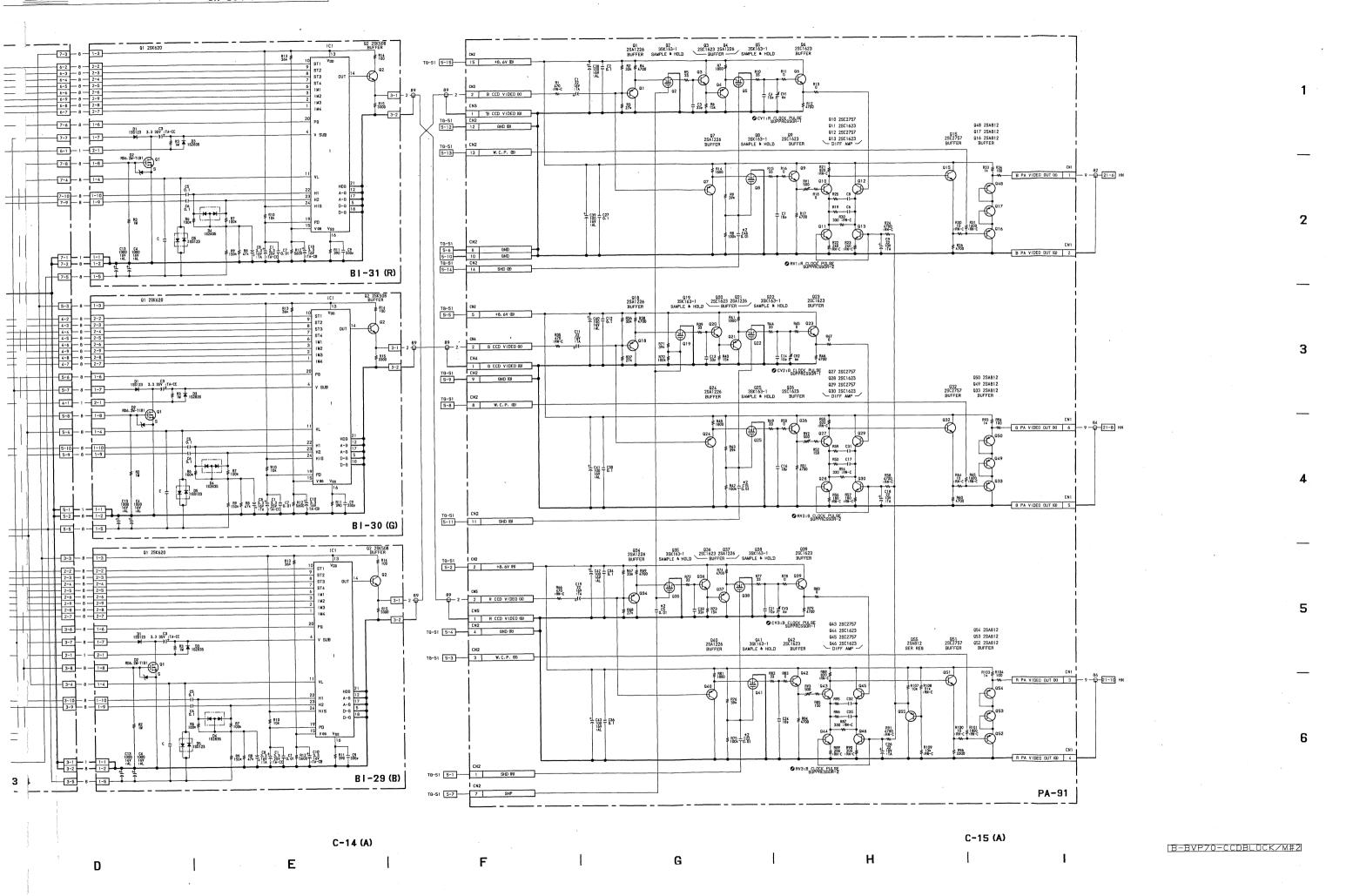
1-630 552-12 SOLDERING SIDE

CCD BLOCK (2/2) BI-29 BOARD BI-30 BOARD BI-31 BOARD CN-304 BOARD PA-91 BOARD

Ser. No 10221- BVP-70 (UC) 30356- BVP-70 (J) 40386- BVP-70P (EK)

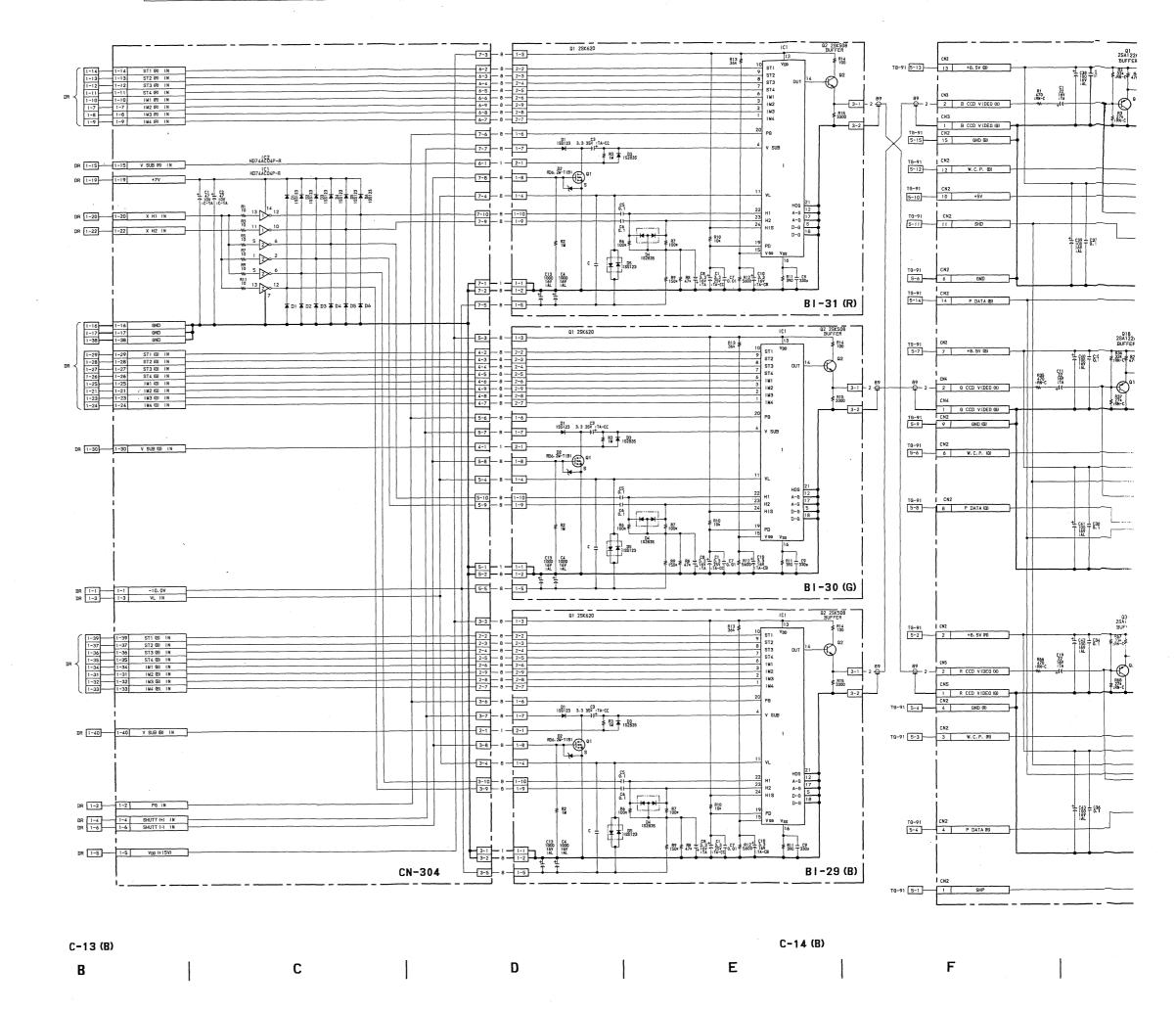


BVP-70 (J, UC) BVP-70P (EK)

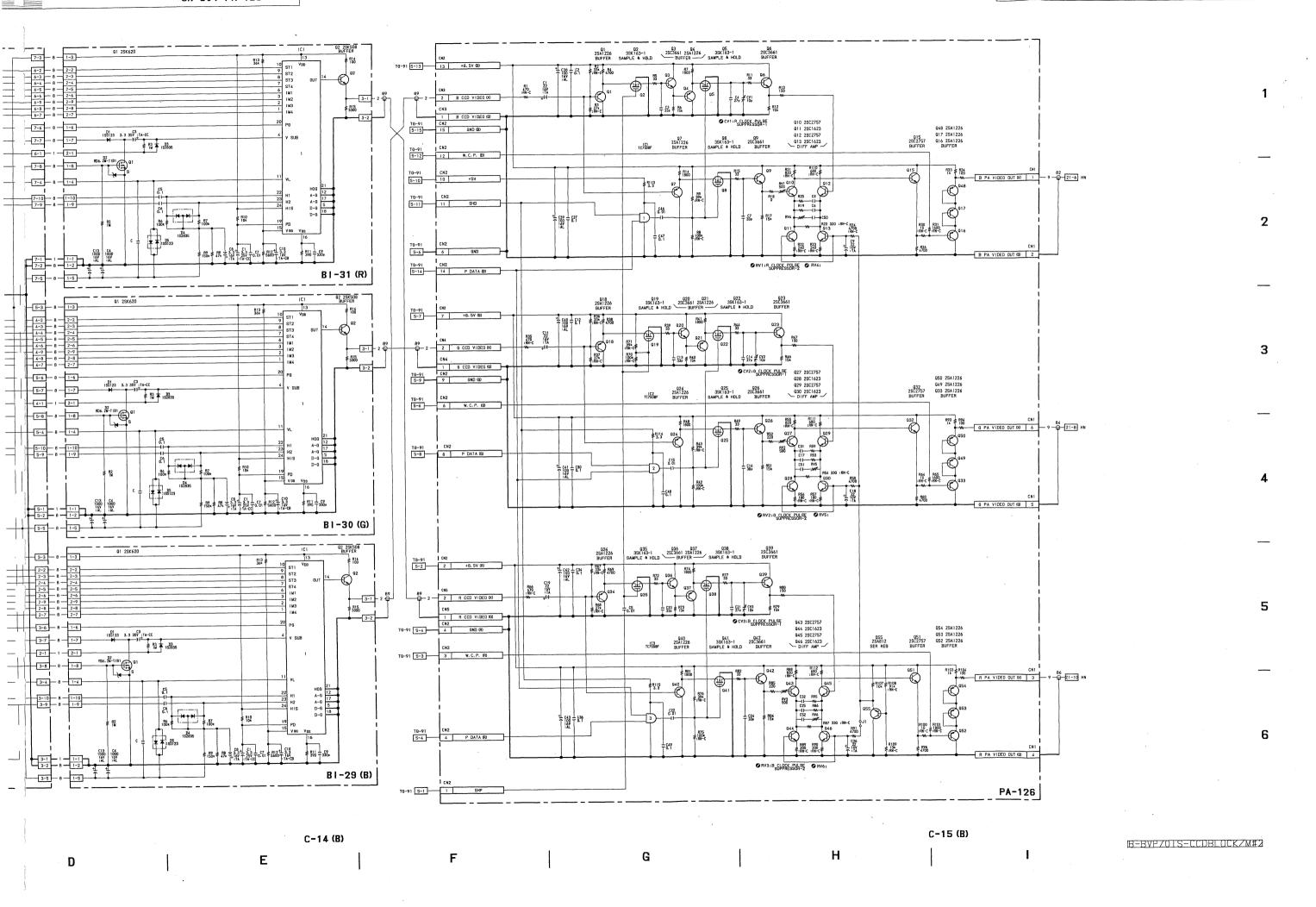


CCD BLOCK (2/2)
BI-29 BOARD
BI-30 BOARD
BI-31 BOARD
CN-304 BOARD
PA-126 BOARD

Ser. No 11187- BVP-701S (UC) 31216- BVP-701S (J) 41263- BVP-701SP (EK)



BVP-701S (J, UC) BVP-701SP (EK)



VA-85 BOARD

Ser No.10221-11060 (UC) 30356-31100 (J) 40386-41075 (EK)

VA-85 (1-630-561-14) 3 2 1 CV1 CV2 CV3 D1 D3 D4 D5 D7 D8 D10 D12 D13 D14 D16 DL1 FL1 FL2 FL3 J - 1 M - 6 G - 4 C - 2 J - 6 K - 5 I - 6 E - 4 E - 5 D - 4 B - 1 TP1 TP2 TP3 TP4 TP5 TP6 TP7 1-630-561-14 SOLDERING SIDE

C-16(a)

B.

B-BVP70-VA85/MOUNT

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C-17 (a)

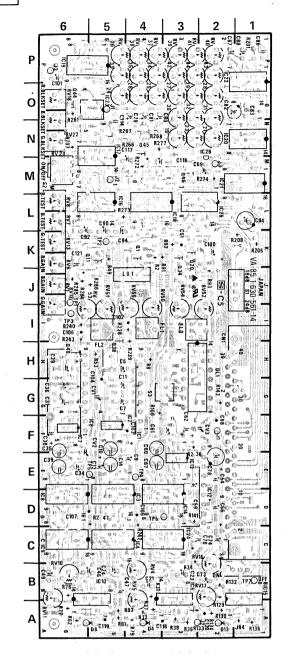
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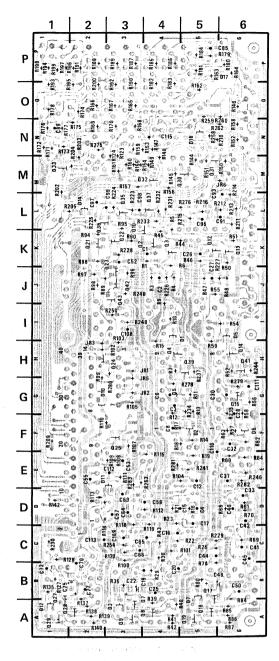
G

FL1 FL2 FL3

I - 3 H - 5 I - 3



1-630-561-14 SOLDERING SIDE



1-630-561-14 SOLDERING SIDE

VA-85 (1-630-561-14) CN1 1 - 2 Q46 G - 5 F - 5 F - 2 CV1 CV2 CV3 D1 D3 D4 D5 D7 D8 D10 D12 D13 D14 D16 A - 3 A - 4 I - 6 A - 5 A - 5 G - 2 A - 1 A - 2 L - 2 N - 5 DL1 H - 2 I - 3 H - 5 I - 3 S1 S2 S3 S4 TP1 TP2 TP3 TP4 TP5 TP6 TP7

C-17 (a)

BVP-70 (J, UC) BVP-70P (EK)

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G

C-18(a)

B-BVP70-VA85/MOUNT

VA-85 BOARD

Ser No.11061-11186 (UC) 31101-31215 (J) 41076-41262 (EK)

VA-85 (1-630-561-15) H - 6 J - 3 J - 3 O - 6 N - 4 M - 3 Q41 Q42 Q43 Q44 Q45 Q46 D1 D3 D4 D5 D7 D8 D10 D12 D13 D14 D16 1 - 5 A - 3 A - 4 I - 6 A - 5 G - 2 A - 1 A - 2 L - 2 N - 5 RV1
RV4
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RV52
RV53
RV55 DL1 I - 3 H - 5 I - 3 FL1 FL2 FL3 JR3 JR4 JR6 S1 S2 S3 S4 TP1 TP2 TP3 TP4 TP5 TP6 TP7 1-630-561-15 SOLDERING SIDE

C-16(b)

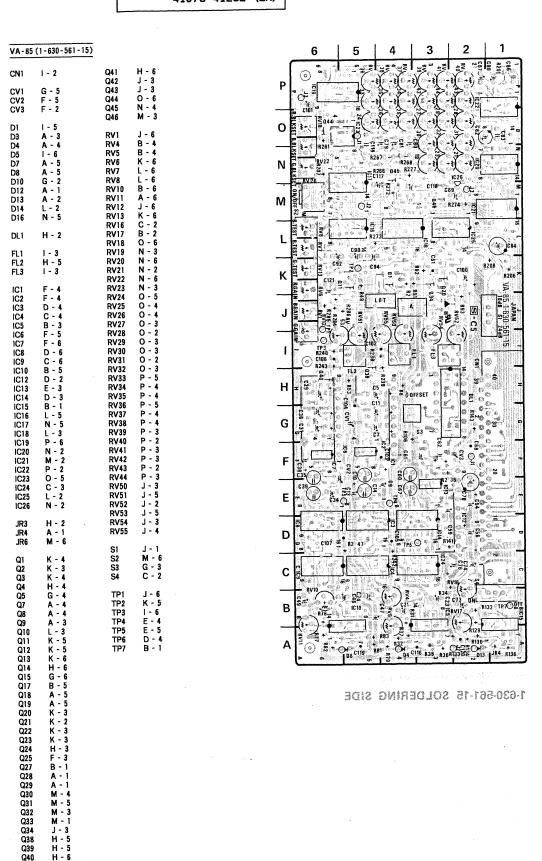
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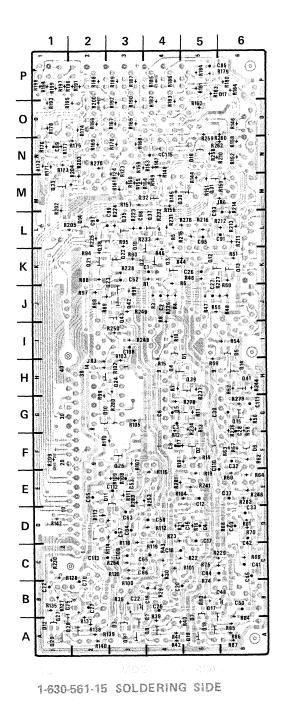
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C-17 (b)

VA-85 BOARD

Ser No.11061-11186 (UC) 31101-31215 (J) 41076-41262 (EK)





VA-85 (1-630-561-15) DL1 H - 2 IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC12 IC13 IC14 IC15 IC16 IC17 IC19 IC20 IC21 IC22 IC23 IC24 IC25 IC25 IC25 IC26 FFDCB--5223315-536222 S1 S2 S3 S4 TP1 TP2 TP3 TP4 TP5 TP6 TP7

BVP-70 (J, UC) BVP-70P (EK)

C-17 (b)

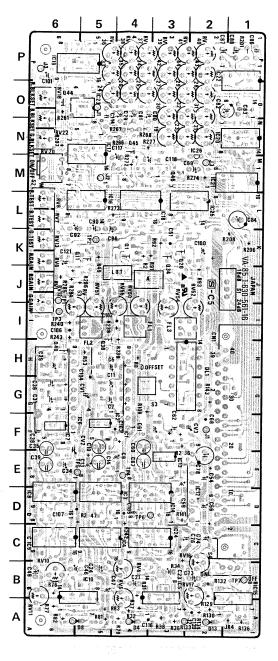
C-18(b)

VA-85

VA-85 BOARD

Ser No.11187-31216-41263-(UC) (J)

VA-85 (1-630-561-16) Q41 Q42 Q43 Q44 Q45 Q46 H - 6 J - 3 J - 3 O - 6 N - 4 M - 3 CN1 CV1 CV2 CV3 D1 D3 D4 D5 D7 D8 D10 D12 D13 D14 D16 I - 5 A - 3 A - 4 I - 6 A - 5 G - 2 A - 1 A - 2 L - 2 N - 5 DL1 H - 2 I - 3 H - 5 I - 3 FL1 FL2 FL3 F - 4 4 4 D C - 4 4 B - 5 - 6 6 C B D - 5 2 B D - 5 3 B L N L - 2 2 P N M - 2 2 2 C L - 2 P - 2 P - 3 J - 3 J - 5 J - 2 J - 5 J - 3 J - 4 H - 2 A - 1 M - 6 J - 1 M - 6 G - 3 C - 2 S1 S2 S3 S4 J - 6 K - 5 I - 6 E - 4 E - 5 D - 4 B - 1 TP1 TP2 TP3 TP4 TP5 TP6 TP7



1-630-561-16 SOLDERING SIDE

B-BVP70-VA85/MOUNT

C-16 (c)

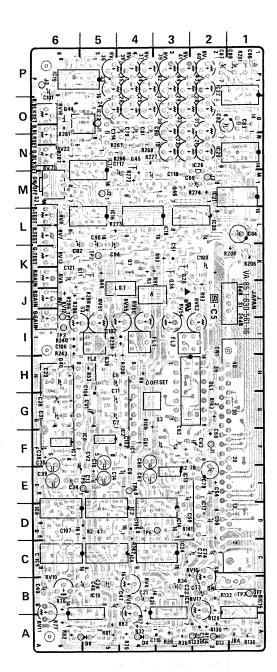
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C-17 (c)

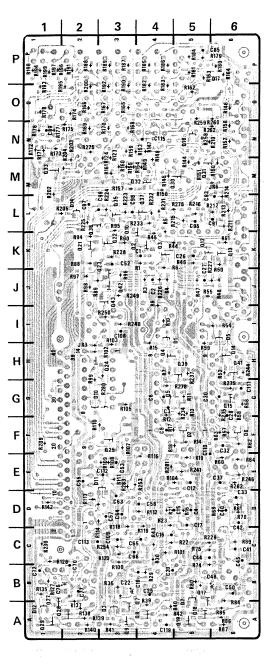
VA-85 BOARD

Ser No.11187- (UC) 31216- (J) 41263- (EK)

VA-85 (1-630-561-16) Q41 Q42 Q43 Q44 Q45 Q46 1 - 2 D1 D3 D4 D5 D7 D8 D10 D12 D13 D14 D16 RV1 J - 6
RV4 B - 4
RV5 B - 4
RV5 B - 6
RV7 L - 6
RV7 L - 6
RV10 B - 6
RV11 A - 6
RV11 A - 6
RV11 A - 6
RV11 A - 6
RV11 B - 6
RV12 J - 6
RV12 J - 6
RV13 N - 2
RV18 N - 3
RV20 N - 6
RV21 N - 2
RV22 N - 6
RV21 N - 2
RV21 O - 3
RV24 O - 5
RV27 O - 3
RV30 O - 3
RV31 O - 2
RV28 O - 2
RV29 O - 3
RV31 O - 2
RV29 O - 3
RV31 P - 4
RV36 P - 5
RV37 P - 4
RV36 P - 5
RV37 P - 4
RV36 P - 5
RV37 P - 4
RV38 P - 4
RV39 P - 3
RV40 P - 2
RV39 P - 3
RV40 P - 2
RV50 J - 3
RV41 P - 3
RV41 P - 3
RV41 P - 3
RV51 J - 5
RV57 J - 5
RV57 J - 5
RV57 J - 5
RV57 J - 6 DL1 H - 2 FL1 FL2 FL3 JR3 JR4 JR6 K - 4 K - 3 K - 4 H - 4 A - 4 A - 3 L - 3 K - 5 K - 6



1-630-561-16 SOLDERING SIDE



1-630-561-16 SOLDERING SIDE

VA-85 (1-630-561-16) Q41 Q42 Q43 Q44 Q45 Q46 CV1 CV2 CV3 D1 D3 D4 D5 D7 D8 D10 D12 D13 D14 D16 I - 5 A - 3 A - 4 I - 6 A - 5 G - 2 A - 1 A - 2 L - 2 N - 5 RV1 RV4 RV5 RV6 RV7 RV8 RV10 DL1 H - 2 FL1 FL2 FL3 F - 4 F - 4 D - 4 B - 3 F - 6 C B - 5 D - 2 E - 3 B - 1 L - 5 L - 3 P - 2 P - 2 P - 2 C - 3 L - 3 F - 6 C B - 3 D - 1 L - 5 L - 3 D - 2 E - 3 D - 2 E - 3 D - 2 E - 3 D - 2 E - 3 D - 2 E - 3 D JR3 JR4 JR6 J - 1 M - 6 G - 3 C - 2 S1 S2 S3 S4 TP1 TP2 TP3 TP4 TP5 TP6 TP7

C-17 (c)

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BVP-70 (J, UC) BVP-70P (EK)

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C-18 (c)

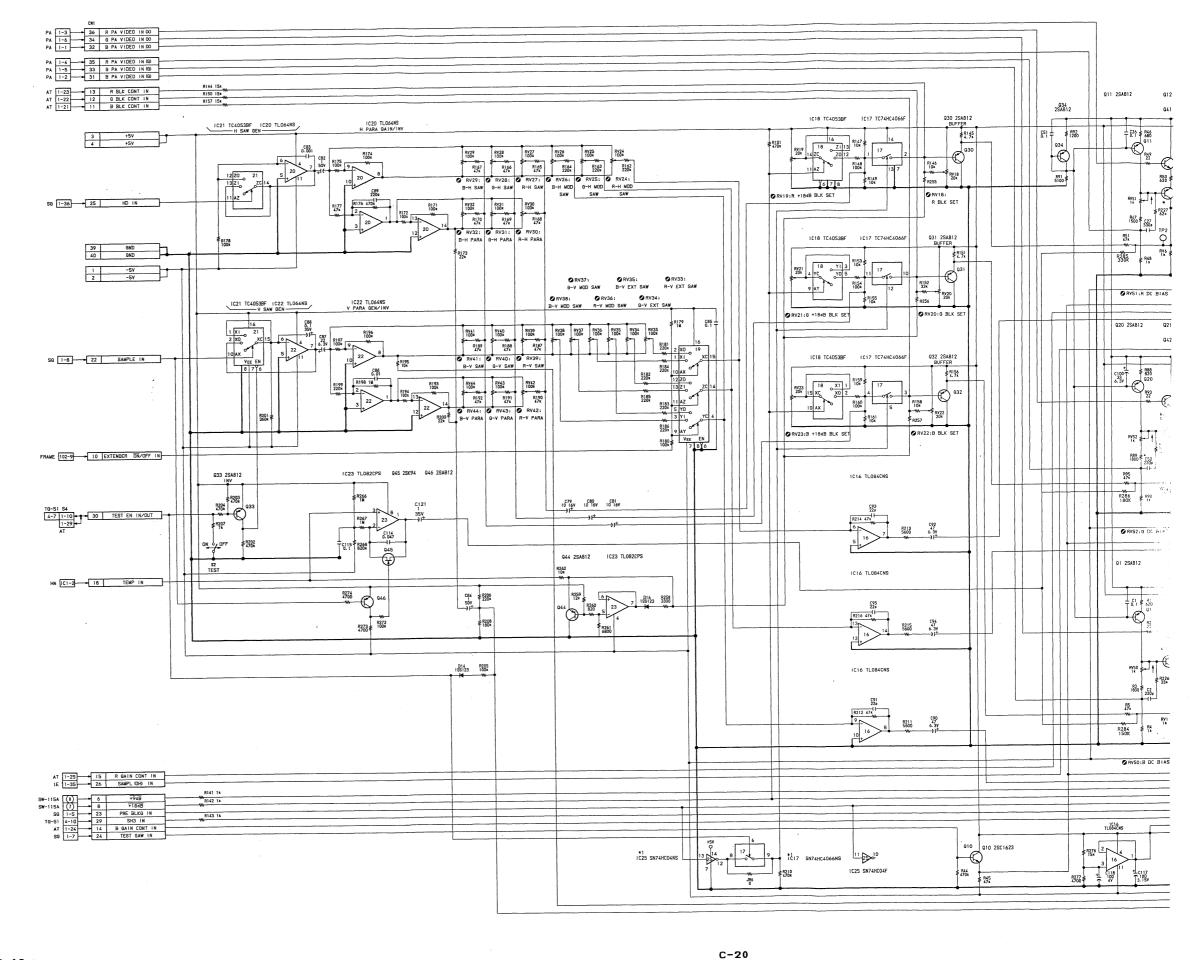
VA-85 BOARD

SAIN SELECTOR

AIN CONTROL

RE-KNEE CORRECTION

HITE/BLACK SHADING CORRECTION



BVP-70 (J. UC) BVP-70P (EK) C-19

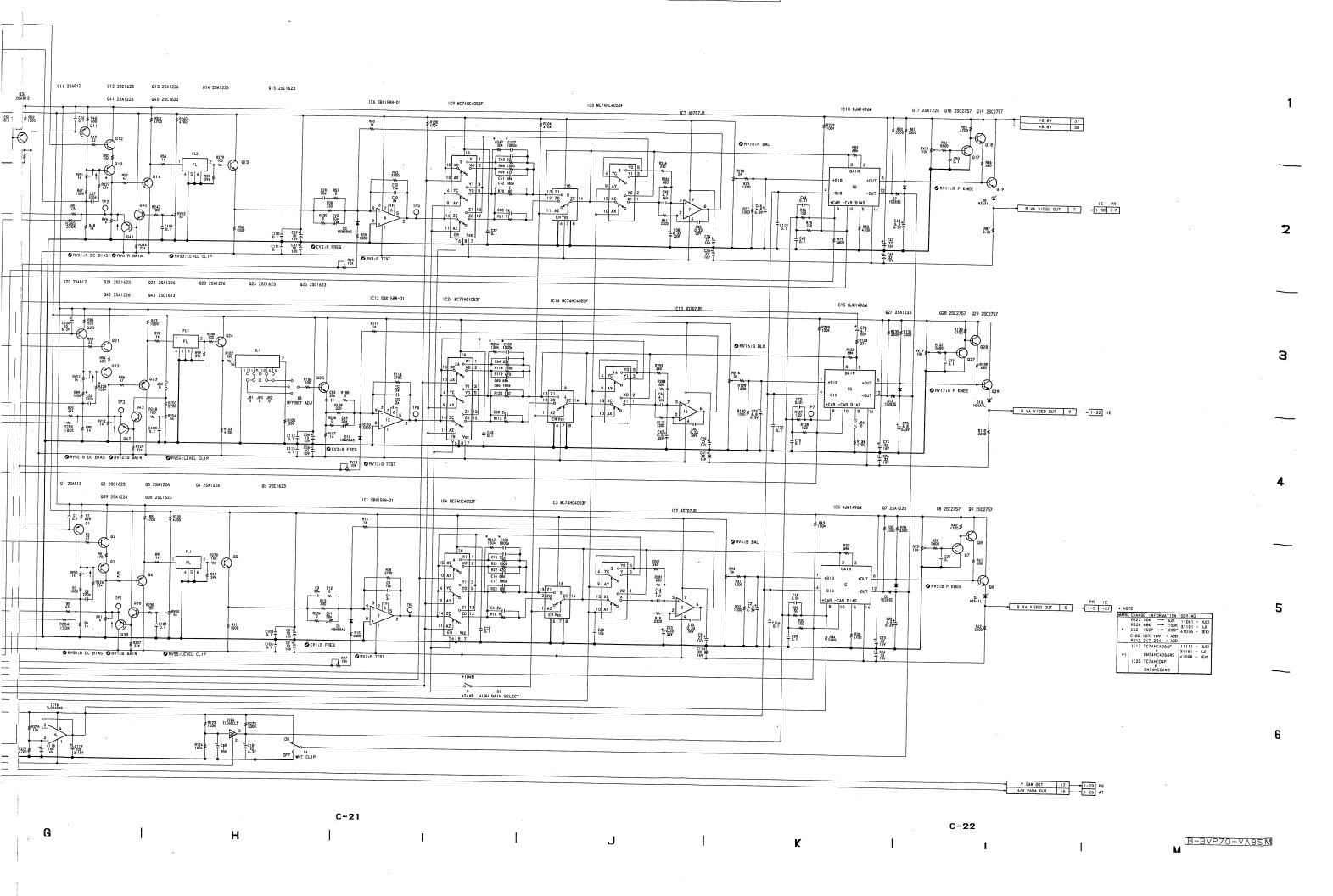
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IE-25/25P

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LMLMEDAPPPC JJKNNMMNOOOOONMLLKKLLLJNNNMMMMPPPHHHGEEEGGGABBIIG
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C-23

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B-BVP70-1E25/MOUNT

В

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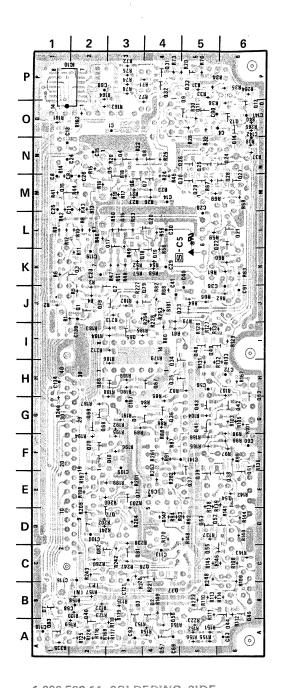
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IE-25/25P BOARD

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IE - 25,	/25P (1-630-562	-14)					_	6	5	4	3	2	1
CN1	H - 2 K - 2	Q51 Q52 Q53	E - 6 D - 5 D - 5				Р	. O (2		640 6678	631	,	83
CV2 CV3 CV4	O - 6 L - 6 F - 5	Q54 Q55 Q56	E - 6 C - 5 B - 4						2523)# .		
D1 D2 D3	G - 3 B - 4 B - 3	Q57 Q63 Q65 Q66	A - 4 G - 6 I - 3 H - 2				0				Control of the contro	5 365 E8	183 - 183 -
D4 D5 D6	B - 6 B - 6 D - 6	Q67 Q68 Q69	H - 4 G - 2 G - 2) = 8 2 }
D7 D8 D9 D10	B - 1 K - 2 E - 5 F - 3	Q70 Q71 Q72 Q75	F - 2 E - 3 D - 3 J - 2				М	172 C46					
D11 D12 D13	C - 3 C - 3 C - 5	Q76 Q77 Q79	C - 4 B - 4 J - 4				L	- ≊(1)\ - ≅[≠]					jej
DL1 DL2 DL3	K - 2 G - 5 I - 4	Q81 Q82 Q83 Q84	C - 3 C - 2 A - 1 B - 2				ĸ		ZE3			[≠](-1)N -
DL4 FL1	D - 2 F - 3	Q85 Q89 Q90	K - 4 G - 2 J - 3				Land Control)() (28 (28		* F. f	25 - 20 C	() () () () () () () () () ()	oto
IC1 IC2 IC3	L - 1 M - 2 L - 5	Q91 RV1 RV2	l - 4 K - 1 l - 4							+ R266 + R266 1268 - RV	NVIS NO TOTAL	i E-25	
IC4 IC5 IC6	M - 5 E - 3 D - 5	RV3 RV4 RV5	F - 5 C - 6 B - 6				1	_	TLALIAS)" [1000	- пота	ا <u>ث</u> 0
IC7 IC8 IC9 IC10	A - 2 P - 1 P - 3 P - 1	RV6 RV7 RV8 RV9	1 - 6 E - 6 E - 6 C - 3				Н	963 / i(c- zeio					.
IC11 Q1	C - 3 J - 2 J - 3	RV10 RV11 RV12 RV14	B - 5 G - 2 F - 2 O - 5				G) S J A	0113 111		188 29	3) (0.6
Q2 Q3 Q4 Q5	K - 2 N - 3 N - 3	RV15 RV16 RV17	J - 3 E - 5 O - 6			•	F	. (**) (**) (**)	AN (F	S 0 00	The state of the s	1.00	
Q6 Q7 Q8 Q9	M - 3 M - 4 N - 4 O - 5	S1 S2	D - 6 D - 3			,	E	± 30	\ 332/°		1012 AND 102 A	90 0 0 0 0 0	
Q10 Q11 Q12	O - 5 O - 5 O - 6	TP1 TP2 TP3	N - 6 M - 6 M - 6				-			<u>ं ं</u> (क)ड	1613 1613 1718 1819	9 9	6 -
Q13 Q14 Q15 Q16	O - 6 N - 6 M - 1 L - 3	TP4 TP5 TP6 TP7	E - 4 G - 6 B - 1 C - 2			,	D	OTL SPR259	en <u>.</u>	$\exists (\cdot)$	600 43		•
Q17 Q18 Q19	L - 3 L - 3 K - 4 K - 4	167					С		C64 17248	1 0663 1 0663 1 258	2 pp 13	126 5 SI 13	941_ =
Q20 Q21 Q22 Q23	L - 4 L - 6 L - 5 J - 4						В		80H	C16 R258 RV10		● 5	○22 4 234 245 CE
Q24 Q25 Q26	N - 6 N - 5 N - 5						A	` _` [, (1) (860)	8 912	# 1017 A
Q27 Q28 Q29 Q30	M - 6 M - 6 M - 5 M - 5						!			**************************************			
Q31 Q32 Q33	P - 4 P - 4 P - 5								SIDE	ERING	SOLD	562-14	1-630-5
Q34 Q35 Q36 Q37	H - 4 H - 4 G - 4 E - 5												
Q38 Q39 Q41	E - 6 E - 5 G - 5												
Q42 Q43 Q44 Q45	G - 6 G - 5 A - 6 B - 6												
Q45 Q47 Q48 Q49	B - 6 B - 2 I - 5 I - 5												
Q50	G - 6												-



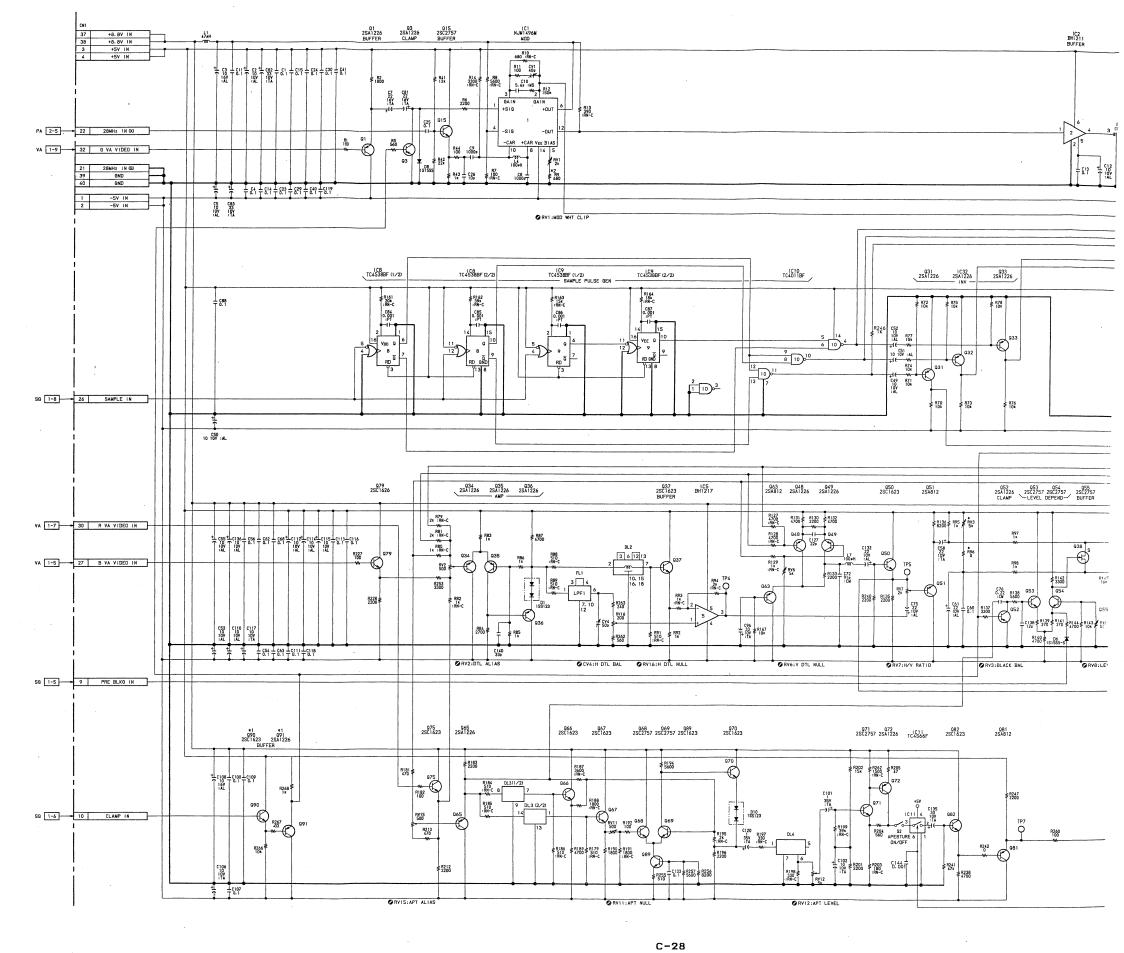
1-630-562-14 SOLDERING SIDE

IE-25/25P (1-630-562-14) CV1 CV2 CV3 CV4 D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 DL1 DL2 DL3 DL4 FL1 K - 2 G - 5 I - 4 D - 2 F - 3 | IC1 | IC2 | IC3 | IC4 | IC5 | IC6 | IC6 | IC7 | IC8 | IC9 S1 S2 TP1 TP2 TP3 TP4 TP5 TP6 TP7

C-25

C-26

IE-25/25P BOARD IMAGE ENHANCER



BVP-70 (J, UC) BVP-70P (EK)

c-27 B

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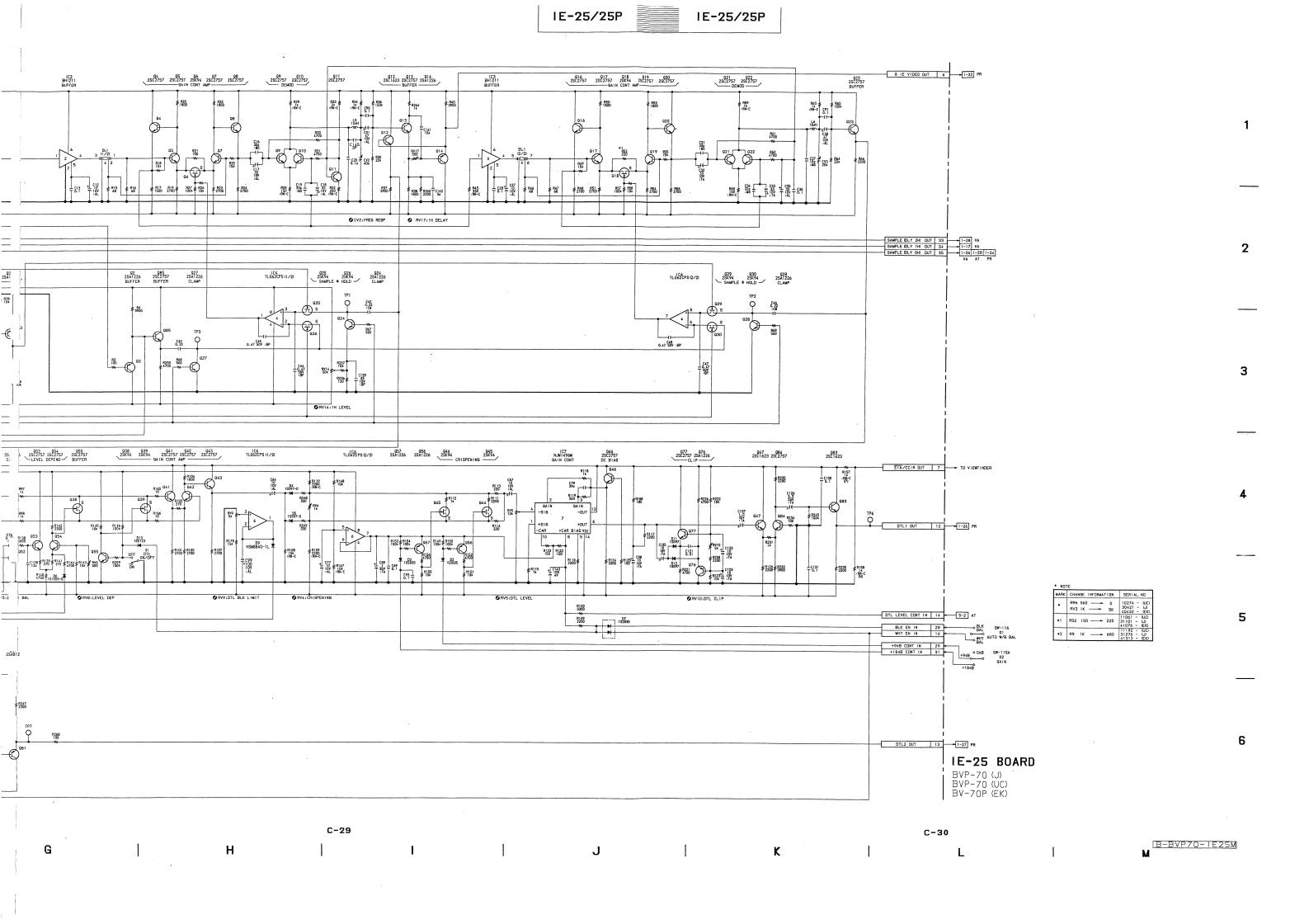
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PR-13

PR-13

PR-14

PR-138 (1

CN1 CN2 CN3 CN4 CN5 CN6 CN7 CN8 CN9 CN10 CN11 CN12 CN13

CV1 CV2 CV3

D3 D4 D5 D7 D8 D11 D12 D14 D15 D16 D17 D18 D19 D28

DL1 DL2 DL3 DL4

IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC11 IC12 IC13

JR1 JR2 JR3 JR5 JR6 JR7 JR8 JR10 JR11 JR12 JR13

PR-138 BOARD

B-BVP70-PR138/MOUNT

Ser No.10221-11060 (UC)

C-31

C

30356-31100 (J) 40386-41075 (EK) PR-139 BOARD PR-140 BOARD 2 3 | 4 | 5 PR-138 (1-630-989-12) PR-140 (1-630-991-11) C - 3 C - 1 C - 2 CN8 CN9 CN10 CN11 CN12 CN13 CN1 CN2 CN3 CN4 CN5 CN6 CN7 CN8 CN9 D - 5 C - 2 D - 1 D - 2 B - 4 CN12 CV1 CV2 CV3 D3 D4 D5 D7 D8 D11 D12 D14 D15 D16 D17 D18 D19 D28 A - 2 A - 2 B - 1 C - 1 C - 2 1-630-991-11 SOLDERING SIDE 1-630-991-11 SOLDERING SIDE C - 4 C - 4 D - 5 A - 1 D - 1 B - 3 D - 1 A - 4 G - 3 G - 1 G - 2 DL1 DL2 DL3 DL4 B - 3 B - 2 B - 3 E - 1 A - 2 C - 1 B - 3 C - 3 E - 3 G - 3 IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC11 IC12 IC13 2 | 3 | PR-139 (1-630-990-11) B - 2 C - 2 E - 2 G - 1 B - 2 C - 2 E - 2 G - 1 CN2 CN3 CN4 CN5 CN6 CN7 183 P. B. E - 1 A - 2 D - 2 A - 4 D - 4 RV1 RV2 RV3 RV4 RV5 RV7 RV7 RV10 RV11 RV12 RV13 RV15 RV16 RV17 RV20 RV22 RV23 RV24 RV25 RV26 RV27 RV26 RV27 RV31 RV32 RV31 RV32 RV31 RV32 RV32 RV33 RV34 IC1 IC2 IC3 JR1 JR2 JR3 JR5 JR6 JR7 JR8 JR9 JR10 C - 2 D - 1 C - 5 Q1 Q2 Q3 Q4 Q5 B - 4 B - 5 B - 4 B - 1 1-630-990-11 SOLDERING SIDE 1-630-990-11 SOLDERING SIDE Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q10 Q11 Q12 Q13 Q14 Q22 Q23 Q24 Q25 Q27 C - 3 C - 1 C - 2 1-630-989-12 SOLDERING SIDE 1630-989-12 SOLDERING SIDE S1 S2 S3 D - 3 D - 2 D - 2

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C-35

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PR-138 BOARD

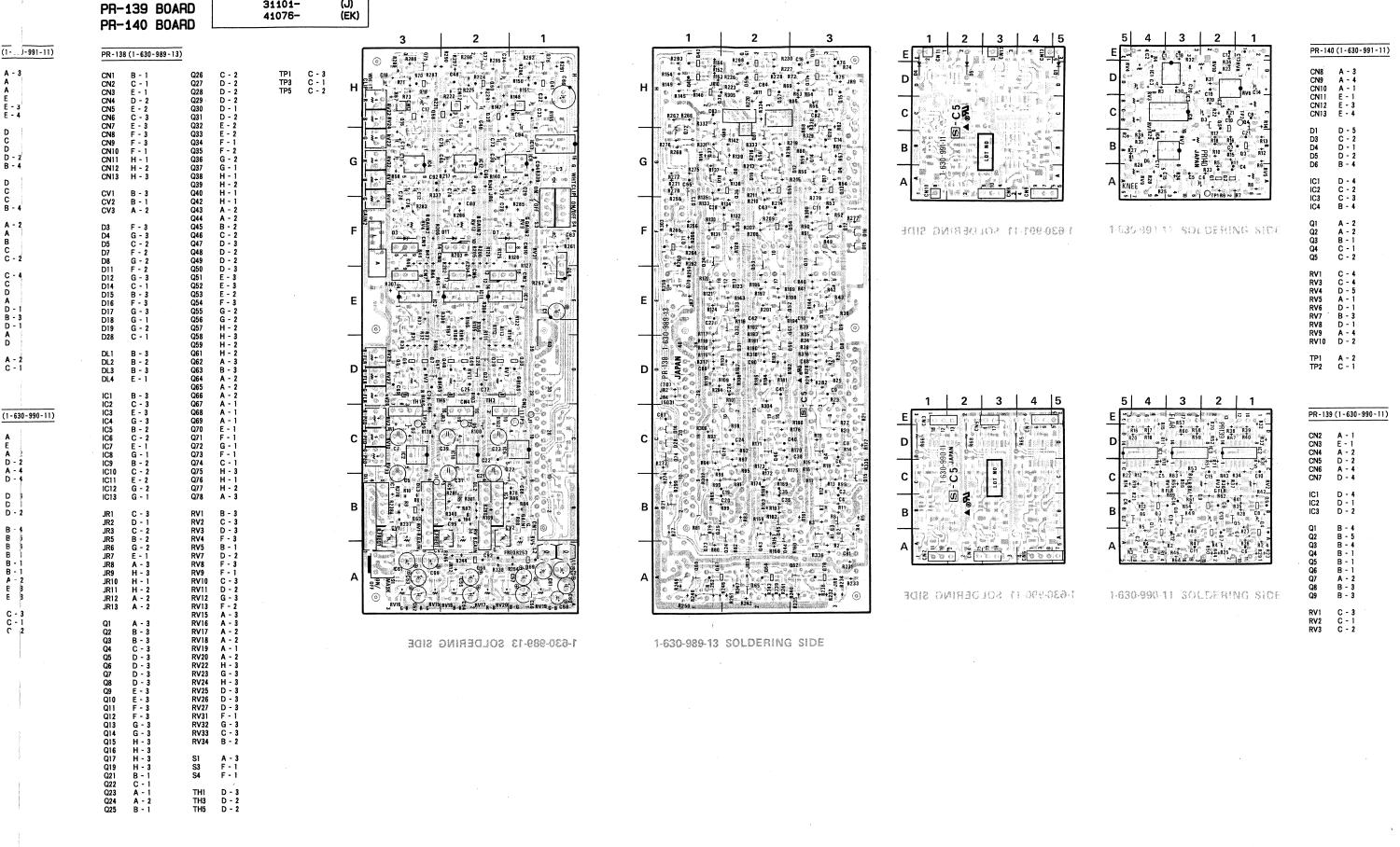
Ser No.11061-

31101-

(UC)

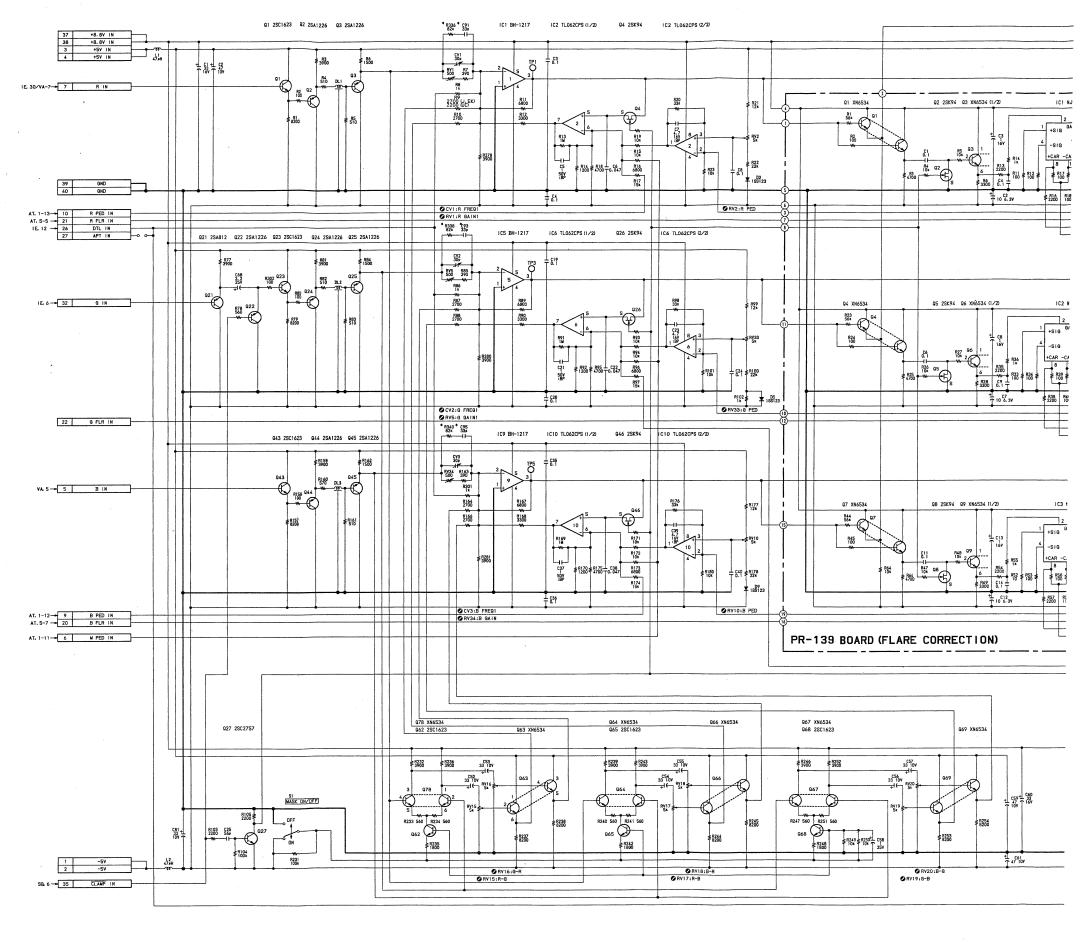
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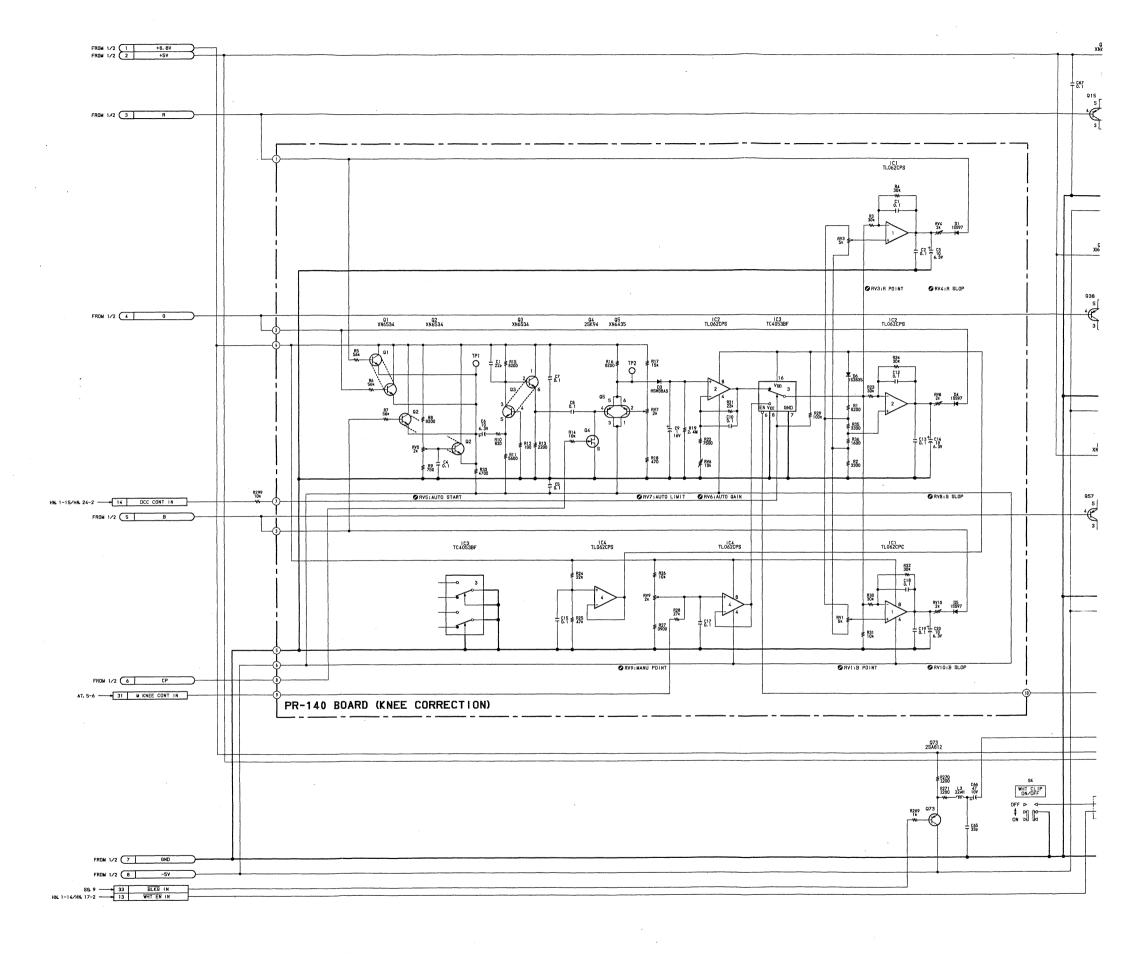


BVP-70 (J, UC) BVP-70P (EK)

C-34



PR-138 (2/2) BOARD PR-140 BOARD



BVP-70 (J/UC) BVP-70P (EK)

C-35-2

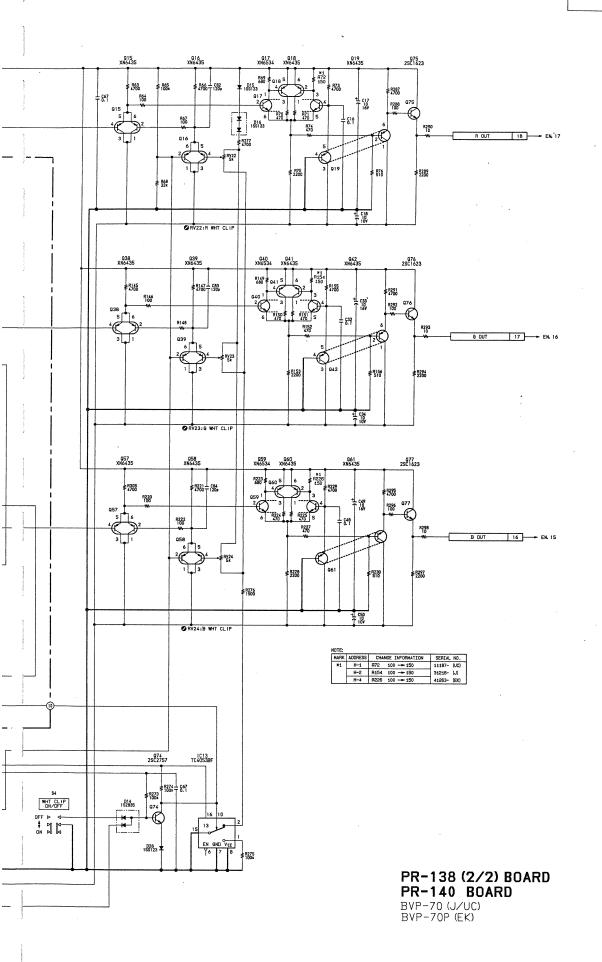
C-36-2

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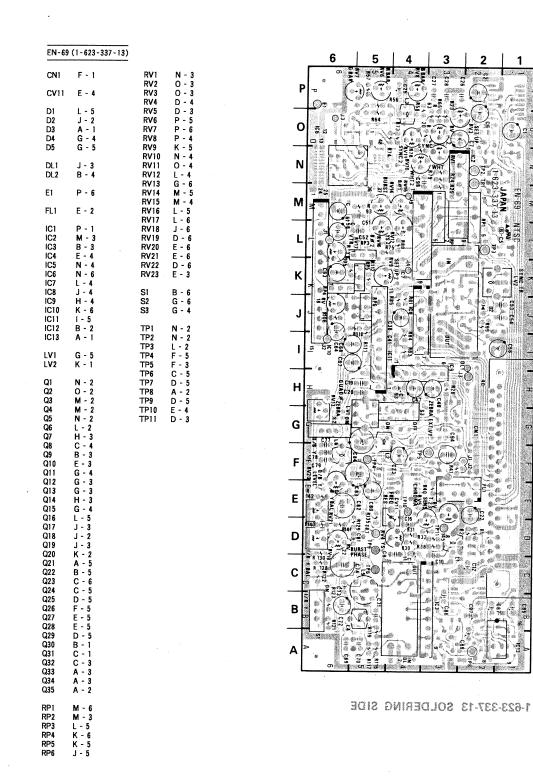
C-38-2

C-37-2

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EN-69P (1-623-8



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EN-6	9 (1-623-	337 - 13)			
CN1 CV11 D1 D2 D3 D4 D5 DL1 DL2 E1 FL1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC8 IC9 IC10 IC10 IC10 IC10 IC2 IC3 IC4 IC5 IC6 IC7 IC7 IC8 IC9 IC10 IC10	F - 1 E - 4 L - 5 J - 2 G - 4 G - 5 J - 3 B - 4 P - 6 E - 2 P - 1 B - 3 E - 4 N - 6 L - 4 H - 4 K - 5		RV1 RV2 RV3 RV4 RV5 RV6 RV7 RV8 RV10 RV11 RV12 RV15 RV16 RV17 RV19 RV20 RV21 RV22 RV23	NOODDPPPKNOLGMML66663 6664	
IC12 IC13 LV1 LV2	B - 2 A - 1 G - 5 K - 1		TP1 TP2 TP3 TP4 TP5	N - 2 N - 2 L - 2 F - 5 F - 3	
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q21 Q21 Q22 Q23 Q22 Q22 Q22 Q22 Q22 Q22 Q22 Q22	NOMMN		TP6 TP7 TP8 TP9 TP10 TP11	C - 5 D - 5 D - 5 E - 4 D - 3	
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LV1 LV2 Q1 Q2 Q3 Q4 Q5 Q6 Q1 Q1 Q12 Q13 Q15 Q16 Q21 Q25 Q26 Q27 Q28 Q29 Q30 Q31 Q32 Q33 Q33 Q33 Q33 Q35 RP1 RP2 RP3 RP4 RP5 RP6 RP7

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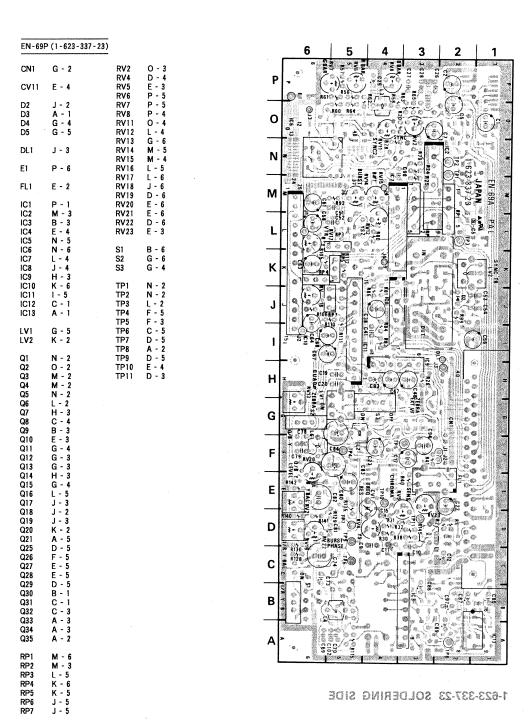
C-40

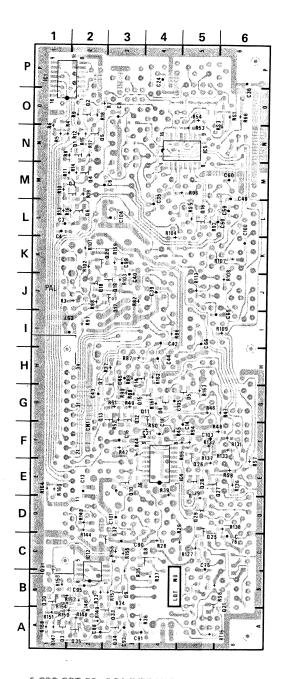
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EN-69P BOARD

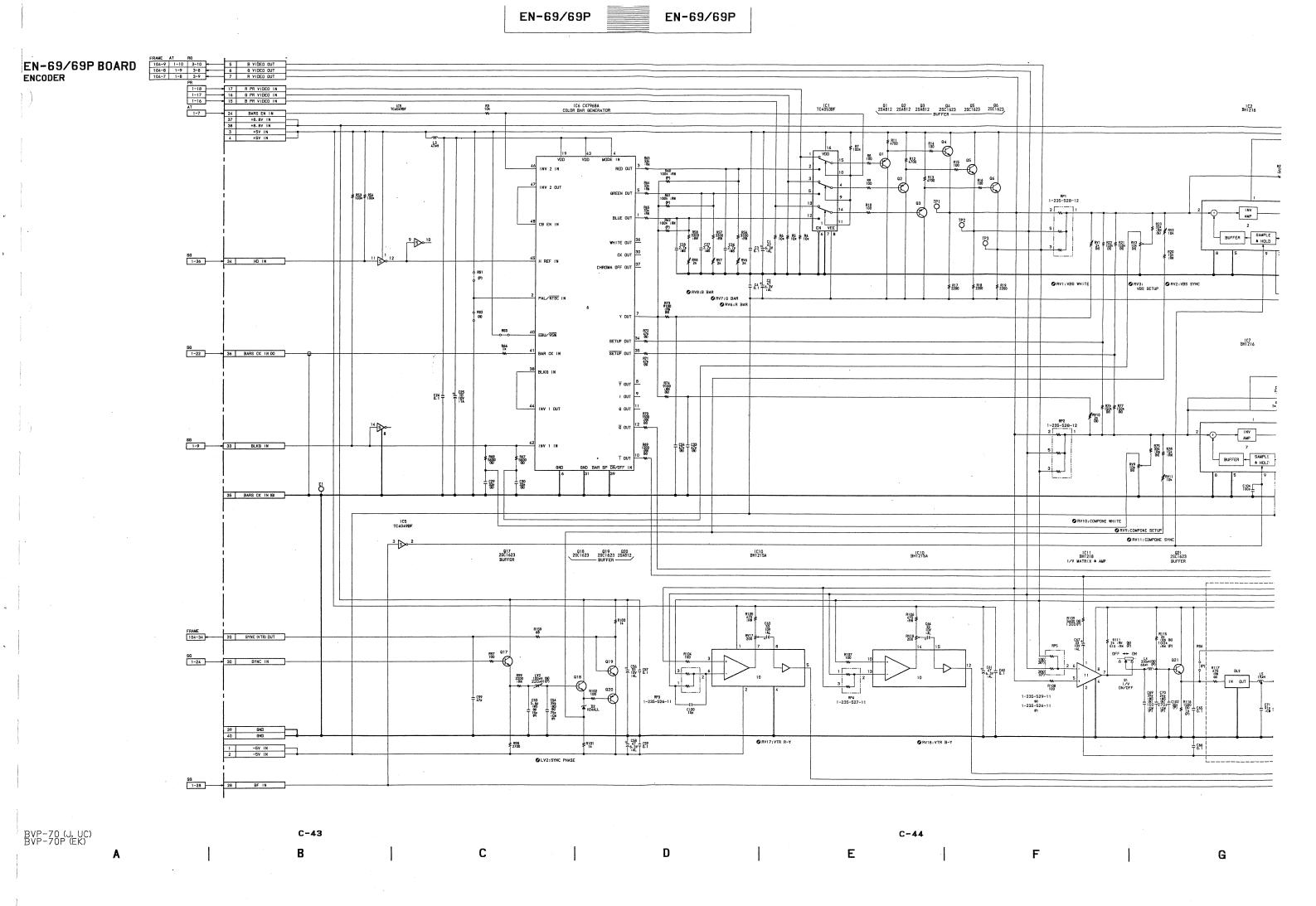


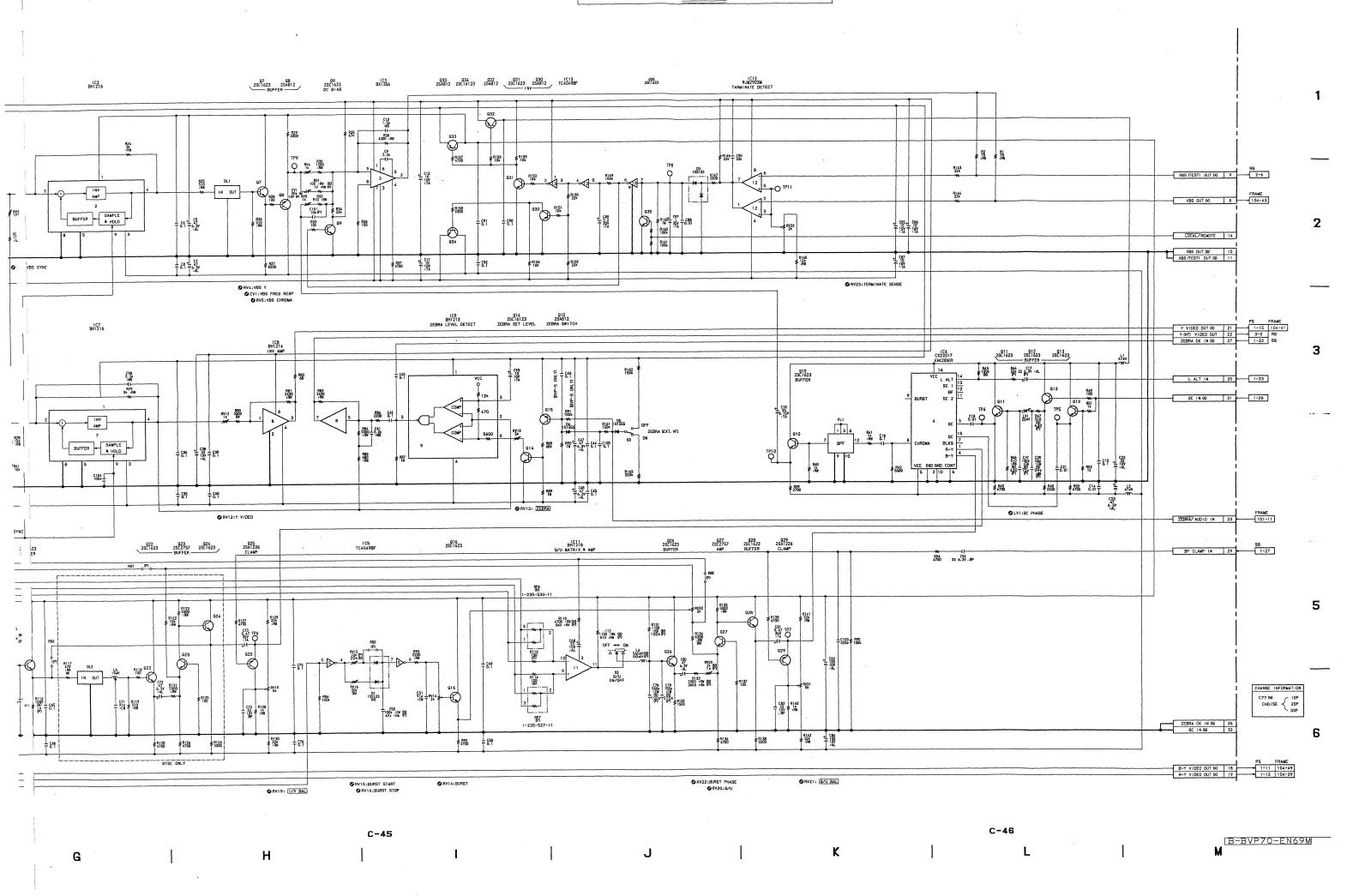


1-623-337-23 SOLDERING SIDE

EN-69	P (1-623-	337 - 23)		
CN1	G - 2		RV2 RV4	0 - D -
CV11	E - 4		RV5 RV6	E
D2 D3 D4 D5	J - 2 A - 1 G - 4 G - 5		RV7 RV8 RV11 RV12 RV13	0 - L - 4
DL1	J - 3		RV14 RV15	M
El	P - 6		RV16 RV17	L - 8
FL1	E - 2		RV18 RV19	J - 6
IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8	P - 1 M - 3 B - 3 E - 4 N - 5 N - 6 L - 4 J - 4 H - 3		RV20 RV21 RV22 RV23 S1 S2 S3	L - S L - S J - G E - G E - G G - G
IC9 IC10 IC11 IC12 IC13	H - 3 K - 6 I - 5 C - 1 A - 1		TP1 TP2 TP3 TP4 TP5	N - 2 L - 2 F - 5 C - 5 D - 5 E - 4
LV1 LV2	G - 5 K - 2		TP6 TP7	C - 5
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q20 Q21 Q22 Q22 Q22 Q22 Q23 Q23 Q23 Q23 Q23 Q23	NO-22 MO-22 MO-22 MO-22 MO-22 MO-22 MO-22 MO-22 MO-22 MO-22 MO-22 MO-23		TP8 TP10 TP11	A - 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
RP1 RP2 RP3 RP4 RP5 RP6 RP7	M - 6 M - 3 L - 5 K - 6 K - 5 J - 5 J - 5			

C-42





PS-224 (

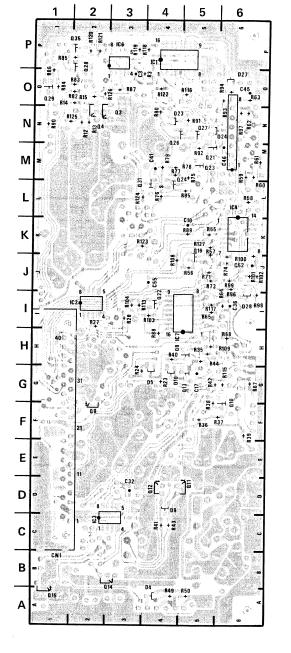
PS-224 BOARD

E1

IC1 IC2 IC3 IC4 IC5 IC6 IC7

Ser No.10221-11060 (UC) 30356-31100 (J) 40386-41075 (EK)

PS-224 (1-634-133-11) D2 D3 D4 D5 D6 D7 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D24 D26 D27 Q3 Q4 Q8 Q10 Q11 Q12 Q13 Q14 Q15 Q21 Q22 Q23 Q24 Q26 Q37 Q36 Q37 Q36 Q37 Q38 Q39 Q42 Q39 Q42 Q44 Q44 Q45 RV1 RV2 RV3 RV4 RV5 RV6 RV7



1-634-133-11 SOLDERING SIDE

D2 D3 D4 D5 D6 D7 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D22 D23 D24 D26 D27 D28 D31 G - 3 EI IC1 IC2 IC3 IC4 IC5 IC6 IC7 Q3 Q4 Q8 Q9 Q10 Q111 Q12 Q13 Q14 Q15 Q26 Q27 Q28 Q31 Q36 Q37 Q38 Q39 Q42 Q42 Q43 Q44 Q44 Q44 RV1 RV2 RV3 RV4 RV5 RV6 RV7 T1

PS-224 (1-634-133-11)

CN1

D2 D3 D4 D5 D6 D7 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D24 D26 D27 D27 D27 D28 D31

ΕI

IC1 IC2 IC3 IC4 IC5 IC6 IC7

Q3 Q4 Q8 Q9 Q10 Q11 Q12 Q13 Q24 Q26 Q27 Q28 Q27 Q28 Q31 Q35 Q36 Q37 Q36 Q37 Q39 Q42 Q42 Q44 Q45

RV1 RV2 RV3 RV4 RV5 RV6 RV7

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TP1 TP2 TP3 TP4 TP5 TP6 TP7

B-BVP70-PS224/MOUNT

TP1 TP2 TP3 TP4 TP5 TP6 TP7

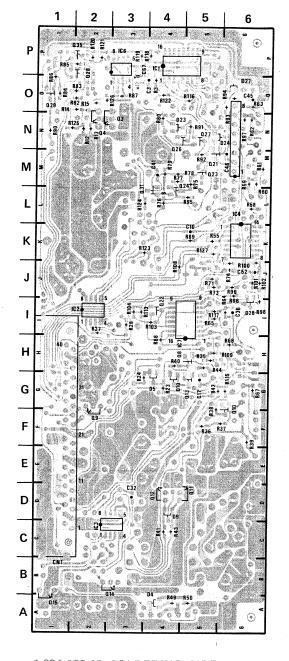
C-47

1-634-133-11 SOLDERING SIDE

PS-224 BOARD

(UC) (J) (EK) Ser No.11061-31101-41076-

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D14 D15 D16 D17	E - 6 B - 6 D - 6 C - 5			M	RV4 pp	O ₁₉	¥)(*)(SZ MINAL
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D27 D28 D31	O - 6 I - 6 G - 6			J	, i	A.F	LOT NO	2		∱ *
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Q22 Q23	I - 4 M - 5			D		11=			C24	
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RV1 RV2 RV3	K - 3 K - 5 H - 3					S SIDE	ERING	SOLE	133-12	-634-
RV4 RV5	M - 6 N - 6									
RV6 RV7	P - 5 O - 4									



1-634-133-12 SOLDERING SIDE

PS-224 (1-634-133-12) CN1 I - 1 D2 D3 D4 D5 D6 D7 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D24 D27 D27 D28 D31 E1 G - 3 IC1 IC2 IC3 IC4 IC5 IC6 IC7 Q3 Q4 Q8 Q9 Q10 Q112 Q13 Q15 Q21 Q22 Q23 Q24 Q26 Q31 Q35 Q35 Q36 Q37 Q37 Q38 Q39 Q42 Q44 Q44 Q44 Q44 RV1 RV2 RV3 RV4 RV5 RV6 RV7 S1 S2 TP1 TP2 TP3 TP4 TP5 TP6 TP7 T1 .A - 4

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BVP-70 (J, UC) BVP-70P (EK)

S1 S2

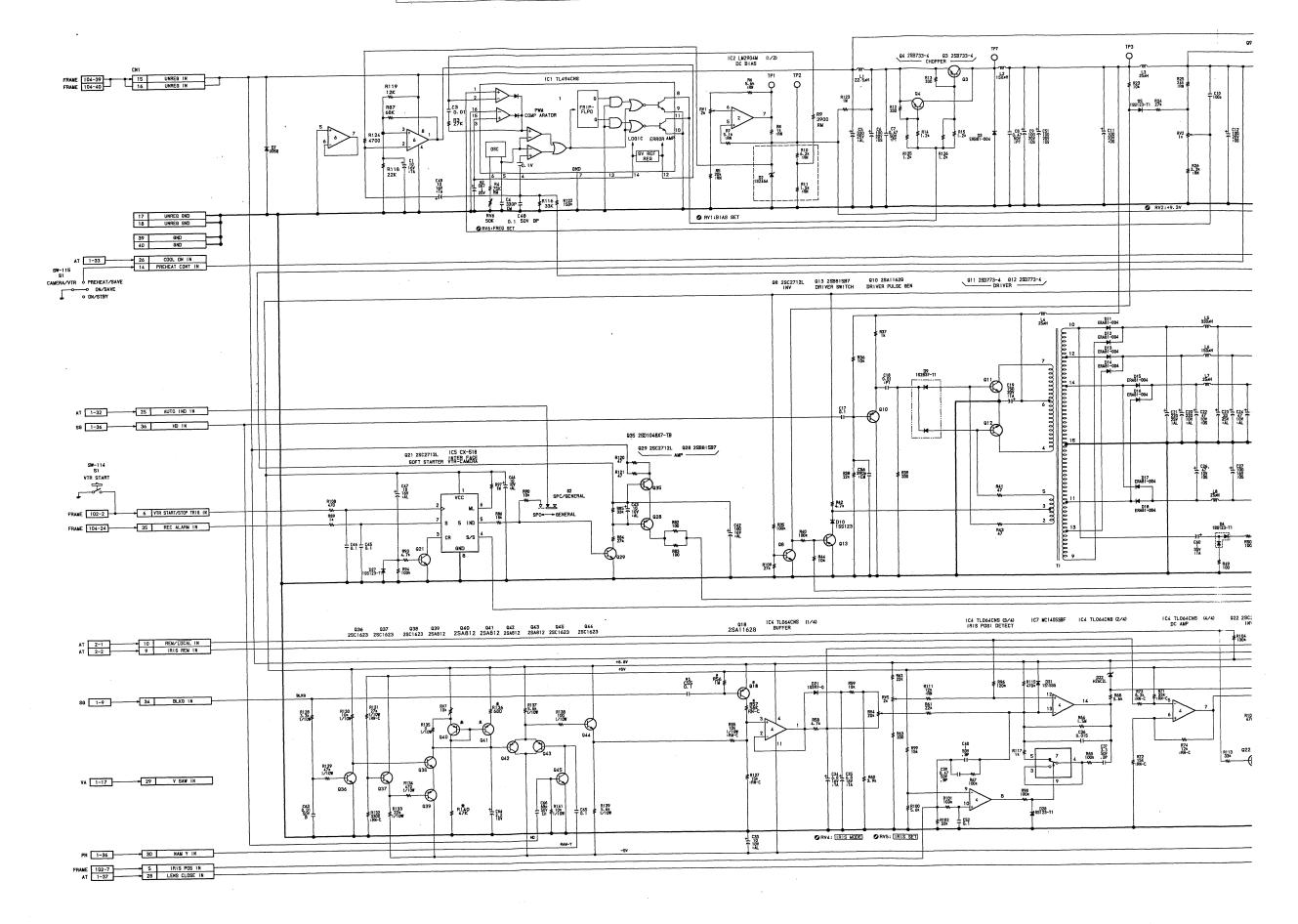
TP1 TP2 TP3 TP4 TP5 TP6 TP7

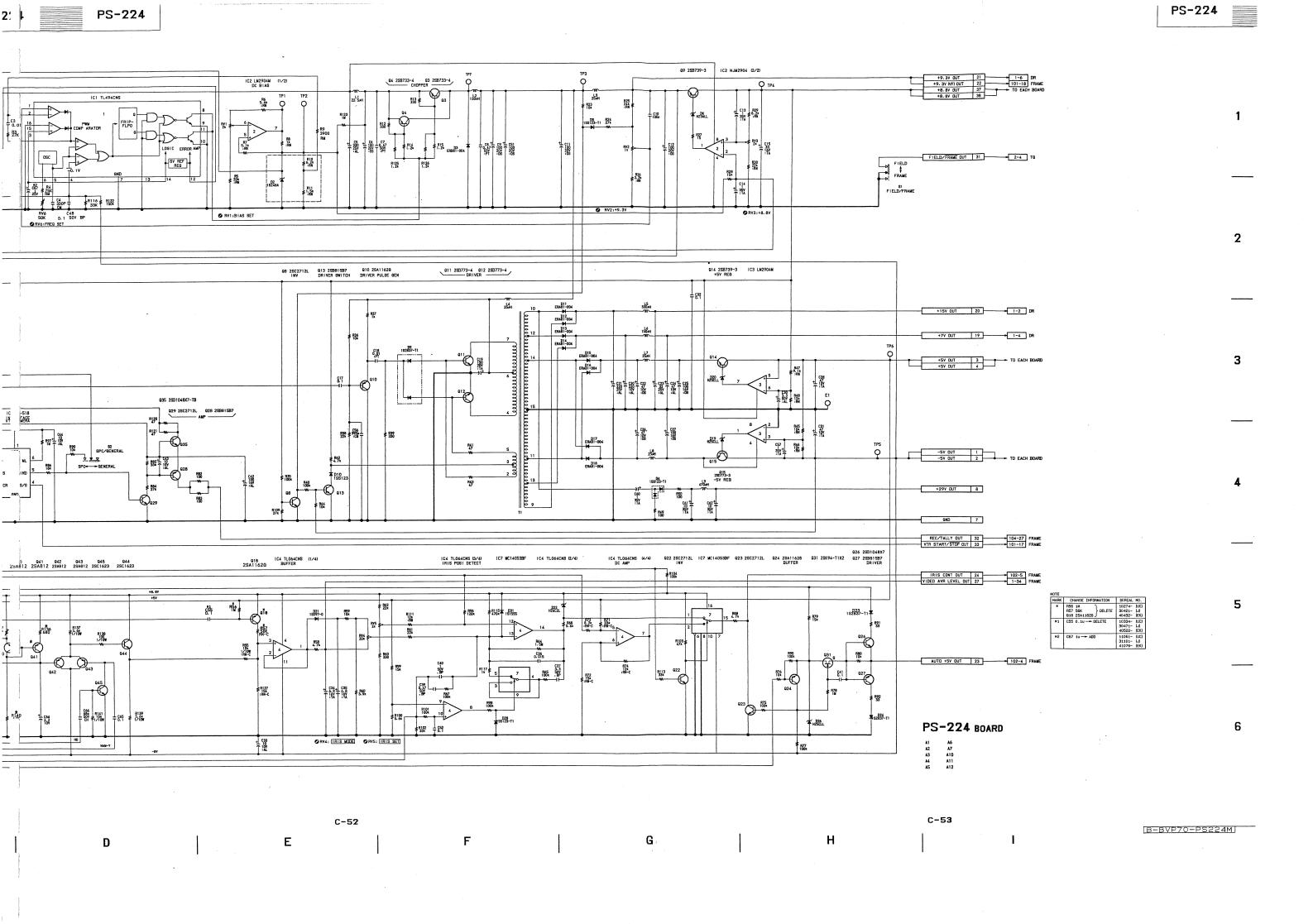
T1

K - 4 J - 3 I - 3 G - 2 B - 1 B - 2 N - 3

A - 4

PS-224 BOARD DC-DC CONVERTER IRIS CONTROL VTR-CAMERA INTERFACE

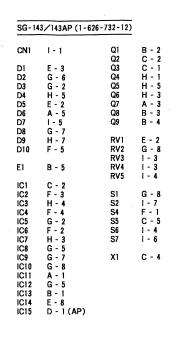


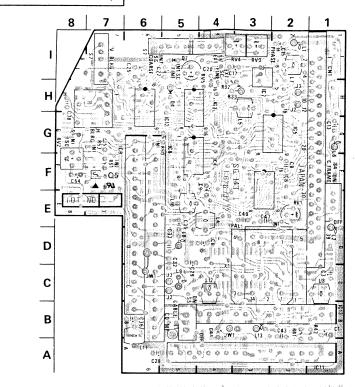


B-BVP70-SG143/MOUNT

SG-143/143AP BOARD

Ser No.10221-11186 (UC) 30356-31215 (J) 40386-41262 (EK)





1-626-732-12 SOLDERING SIDE

C-54 (a)

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C-55 (a)

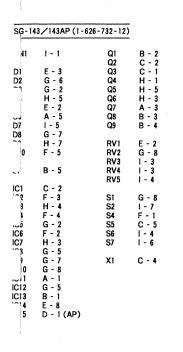
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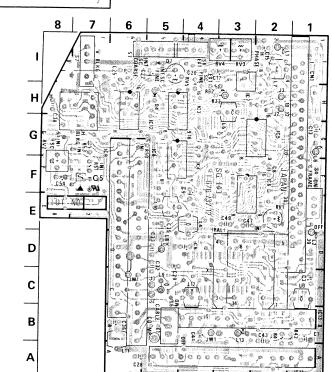
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G

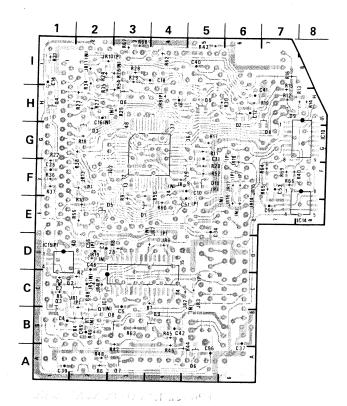


Ser No.10221-11186 (UC) 30356-31215 (J) 40386-41262 (EK)





1-626-732-12 SOLDERING SIDE



1-626-732-12 SOLDERING SIDE

SG-143/143AP (1-626-732-12) B - 2 C - 2 C - 1 H - 1 H - 5 H - 3 A - 3 B - 3 IC1 C - 2
IC2 F - 3
IC3 H - 4
IC4 F - 4
IC5 G - 2
IC7 H - 3
IC8 G - 5
IC9 G - 7
IC10 G - 8
IC11 A - 1
IC12 G - 5
IC13 B - 1
IC14 E - 8
IC15 D - 1 (AP) X1 C - 4

C-55 (a)

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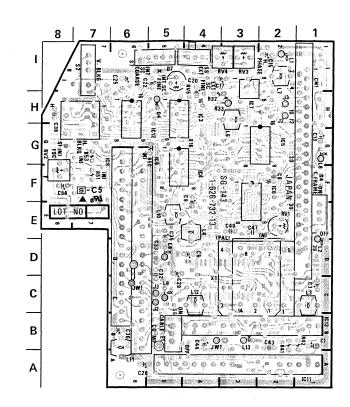
C-56 (a)

BVP-70 (J, UC) BVP-70P (EK)

SG-143/143AP BOARD

Ser No.11187-31216-41263-(UC) (J) (EK)

SG-143/143AP (1-626-732-13) C - 4



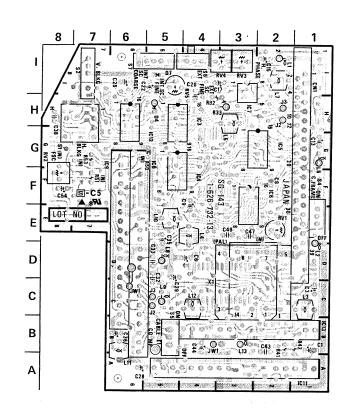
1-626-732-13 SOLDERING SIDE

C-55 (b)

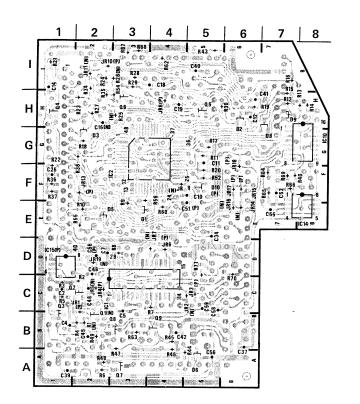
SG-143/143AP BOARD

Ser No.11187-31216-41263-(UC) (J) (EK)

SG-14	3/143AP (1-62	6-732-13)	!
CN1	1 - 1	Q1	B - 2
		Q2	C - 2
01	E - 3	Q3	C - 1
)2	G - 6	Q4	H - 1
D3	G - 2	Q5	H - 5
D4	H - 5	Q6	H - 3
D 5	E - 2	Q7	A - 3
)6	A - 5	Q8	B - 3
7	1 - 5	Q9	B - 4
28	G - 7		
)9	H - 7	RV1	E - 2
010	F - 5 (AP)	RV2	G - 8
		RV3	1 - 3
C1	C - 2	RV4	1 - 3
C2	F - 3	RV5	1 - 4
C3	H - 4		
C4	F - 4	S1	G - 8
C5	G - 2	S2	1 - 7
C6	F - 2	S4	F - 1
C7	H - 3	S5	C - 5
C8	G - 5	S6	I - 4
C9	G - 7	S7	I - 6
C10	G - 8		_
C11	A - 1	X 1	C - 4
C12	G - 5		
C13	B - 1		
C14	E - 8		
C15	D - 1 (AP)		



1-626-732-13 SOLDERING SIDE



1-626-732-13 SOLDERING SIDE

SG-143/143AP (1-626-732-13) D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 RV1 RV2 RV3 RV4 RV5 IC1 C - 2 IC2 F - 3 IC3 H - 4 IC4 F - 4 IC5 G - 2 IC6 F - 2 IC7 H - 3 IC8 G - 5 IC9 G - 7 IC10 G - 8 IC11 A - 1 IC12 G - 5 IC13 B - 1 IC14 E - 8 IC15 D - 1 (AP) **X**1 C - 4

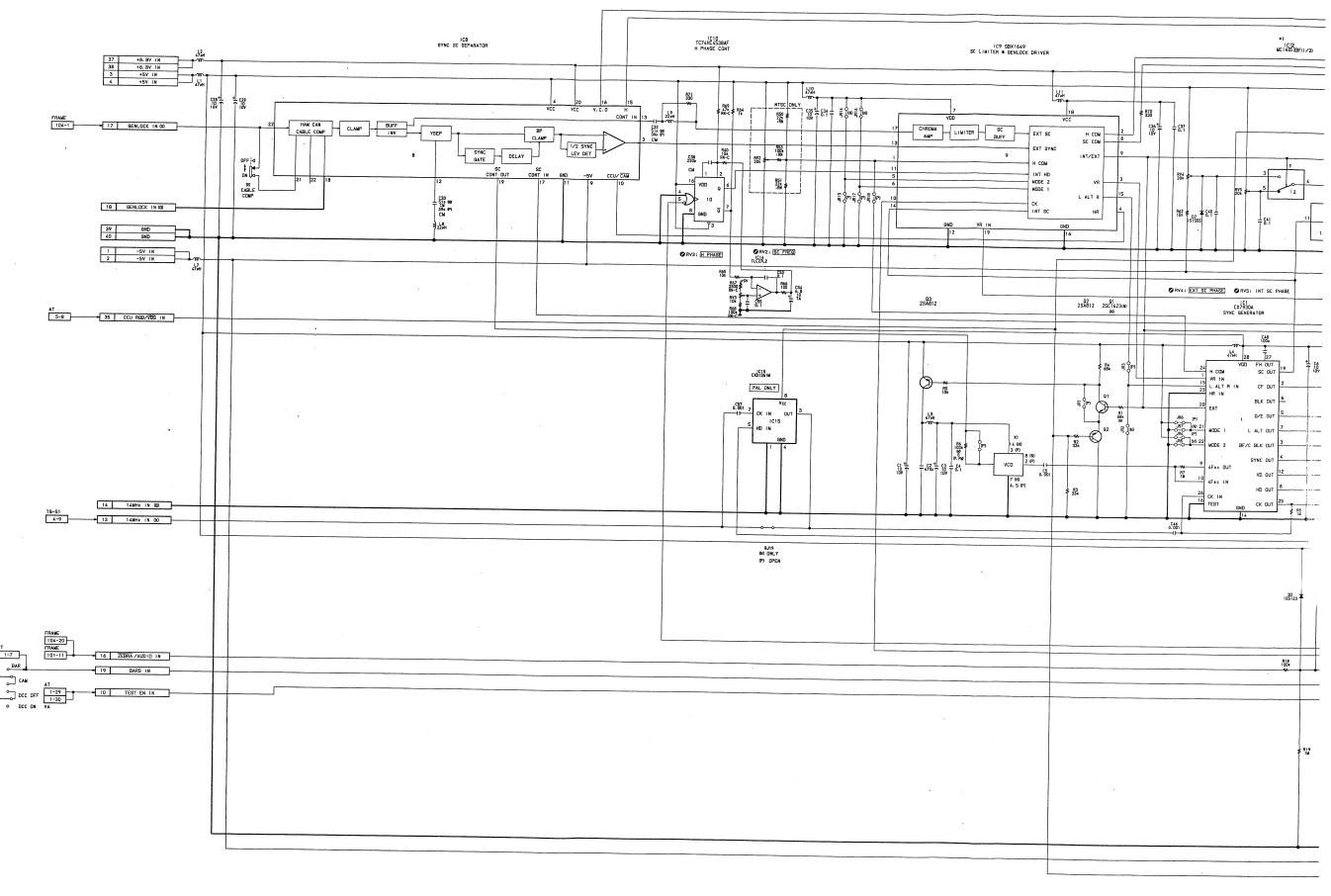
C-55 (b)

C-56 (b)

BVP-70 (J, UC) BVP-70P (EK)

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SG-143/143AP BOARD SYNC GENERATOR TIMING PULS GENERATER PHASE CONTROL



BVP-70 (J, UC) BVP-70P (EK)

C-57

В

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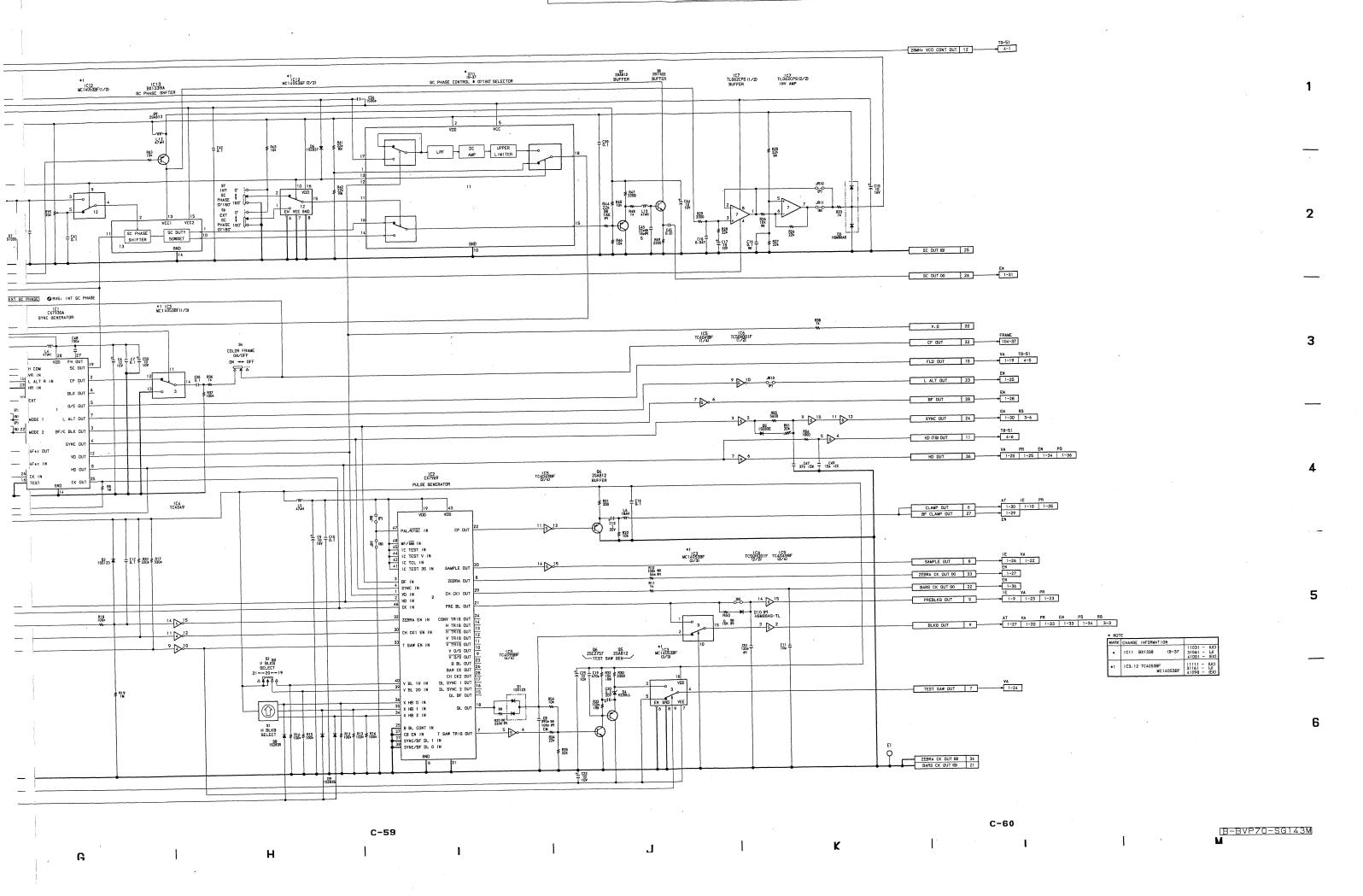
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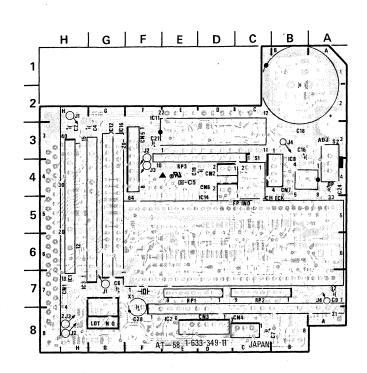
AT-58 BOARD

Ser No.10221-11060 (UC) 30356-31100 (J) 40386-41075 (EK)

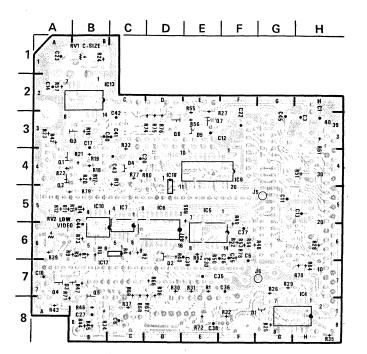
AT-58 (1-633-349-11) H - 7 D - 4 D - 8 C - 8 F - 3 D - 4 B - 4 CN1 CN2 CN3 CN4 CN5 CN6 CN7 G - 8 D - 7 A - 7 C - 4 E - 3 D1 D2 D3 D4 D5 IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC11 IC12 IC13 IC14 IC15 IC16 IC17 IC18 H - 7 E - 8 H - 7 H - 7 E - 5 D - 5 B - 4 F - 4 B - 5 G - 3 B - 2 D - 5 G - 3 B - 2 D - 5 A - 4 A - 4 B - 3 A - 7 B - 7 D - 3 E - 3 E - 7 C - 7 E - 4 RP1 RP2 RP3 RV1 RV2 B - 1 A - 5

C - 4 A - 3

F - 7



3-633-349-11 SOLDERING SIDE



1833 349 11 SOLDERING SIDE

AT-58 (1-633-349-11) AT-58 (1 CN1 CN2 CN3 CN4 CN5 CN6 CN7 D1 D2 D3 D4 D5 IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC11 IC12 IC13 IC14 IC15 IC16 IC17 IC18 RV1 RV2 C - 4 A - 3 F - 7

RP1 RP2 RP3

RV1 RV2

S1 S2

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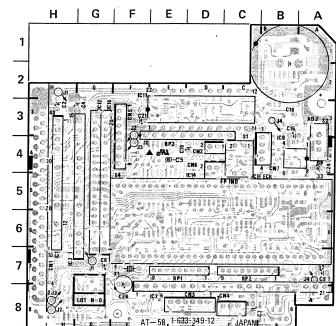
AT-5

B-BVP70-AT58/MOUNT

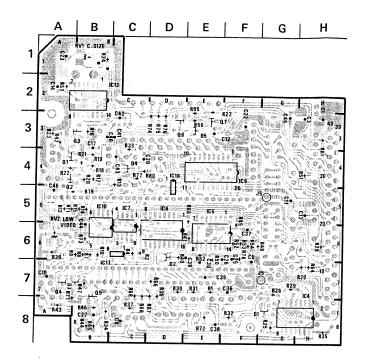
AT-58 BOARD

C - 4 A - 3 Ser No.11061-11186 (UC) 31101-31215 (J) 41076-41262 (EK)

AT-58	(1-633-3	149-12)				
CN1 CN2 CN3 CN4 CN5 CN6 CN7	H - 7 D - 4 D - 8 C - 8 F - 3 D - 4 B - 4				12	
01 02 03 04 05	F - 8 D - 7 A - 7 C - 4 E - 3				3	
C1 C2 C3 C4 C5 C6	H - 7 E - 8 H - 7 H - 7 E - 5 D - 5				4 5	420000
C7 C8 C9 C10 C11 C12	C - 5 B - 4 F - 4 B - 5 F - 2 G - 3				6	
C13 C14 C15 C16 C17 C18	B - 2 D - 5 D - 5 G - 3 B - 7 D - 4				8	
21 22 23 24 25 26 27	A - 4 A - 4 B - 3 A - 7 B - 7 D - 3 E - 3					
RP1 RP2 RP3	E - 7 C - 7 E - 4					
RV1 RV2	B - 1 A - 5					



1-633-349-12 SOLDERING SIDE



1-633-349-12 SOLDERING SIDE

AT-58 BOARD

(UC) (J) (EK) Ser No.11187-31216-41263-

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AT-58 (1-633-349-13) CN1 CN2 CN3 CN4 CN5 CN6 CN7 H - 7 D - 4 D - 8 C - 8 F - 3 D - 4 B - 4 F - 8 D - 7 A - 7 C - 4 E - 3 D1 D2 D3 D4 D5 IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC11 IC12 IC13 IC14 IC15 IC16 IC17 IC18 Q1 Q2 Q3 Q4 Q5 Q6 Q7

E - 7 C - 7 E - 4

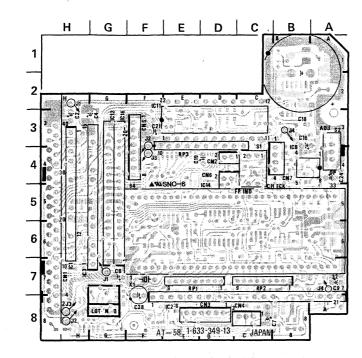
B - 1 A - 5

C - 4 A - 3

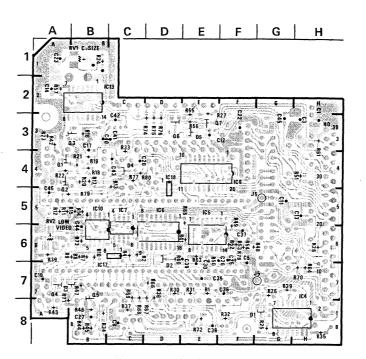
X1 F - 7

RP1 RP2 RP3

RV1 RV2



1-633-349-13 SOLDERING SIDE



1-633-349-13 SOLDERING SIDE

AT-58 (1-633-349-13) CN1 CN2 CN3 CN4 CN5 CN6 CN7 H - 7 D - 4 D - 8 C - 8 F - 3 D - 4 B - 4 D1 D2 D3 D4 D5 F - 8 D - 7 A - 7 C - 4 E - 3 IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8 IC9 IC10 IC11 IC12 IC13 IC14 IC15 IC16 IC17 IC18 H - 7 E - 8 H - 7 H - 7 E - 5 D C - 5 B - 4 F - 4 B - 5 G - 3 B D - 5 G - 3 D - 5 A - 4 B - 3 A - 7 B - 7 D - 3 E - 3 Q1 Q2 Q3 Q4 Q5 Q6 Q7 RP1 RP2 RP3 E - 7 C - 7 E - 4 RV1 RV2 B - 1 A - 5 S1 S2 C - 4 A - 3 X1 F - 7

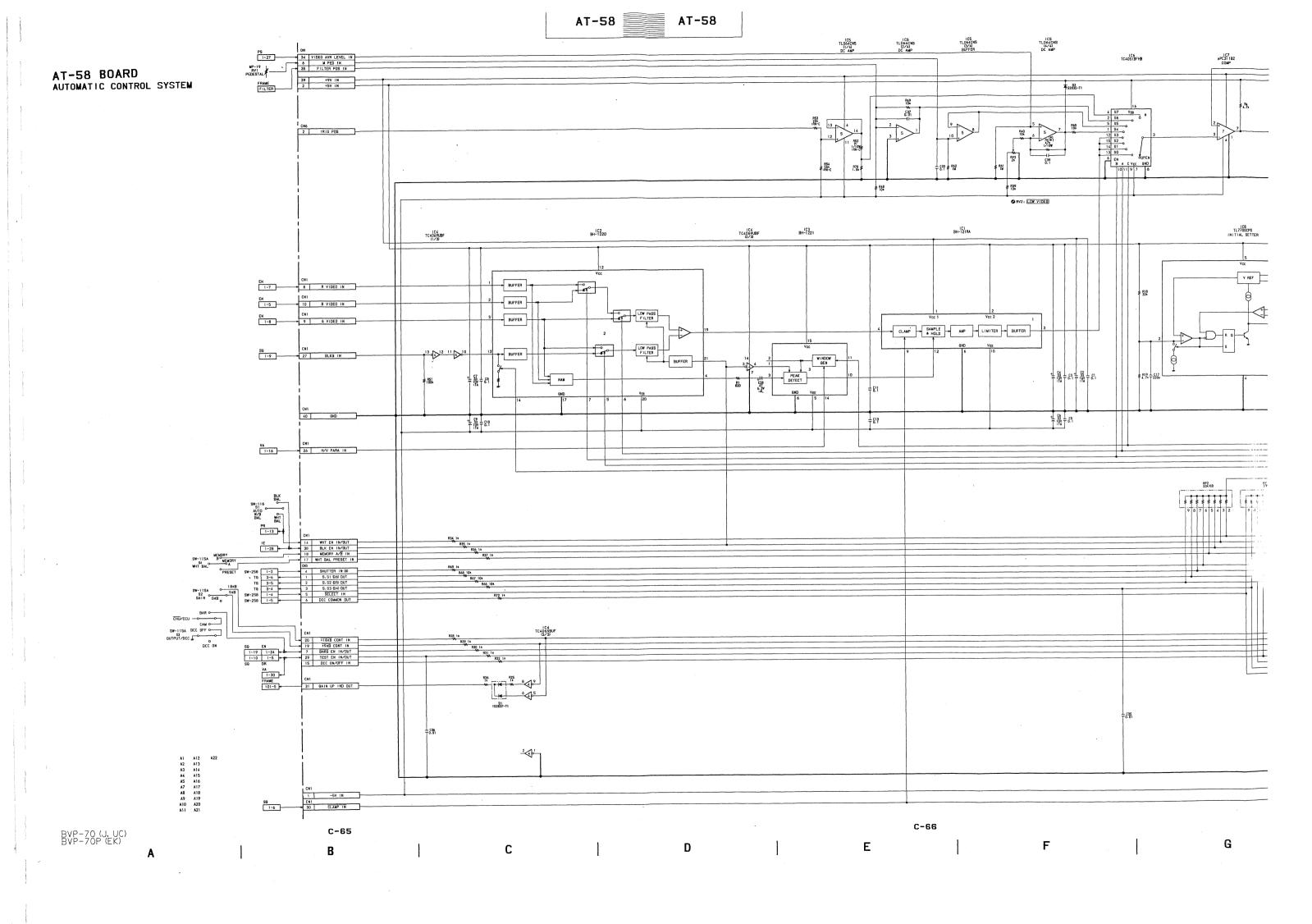
B-BVP70-AT58/MOUNT

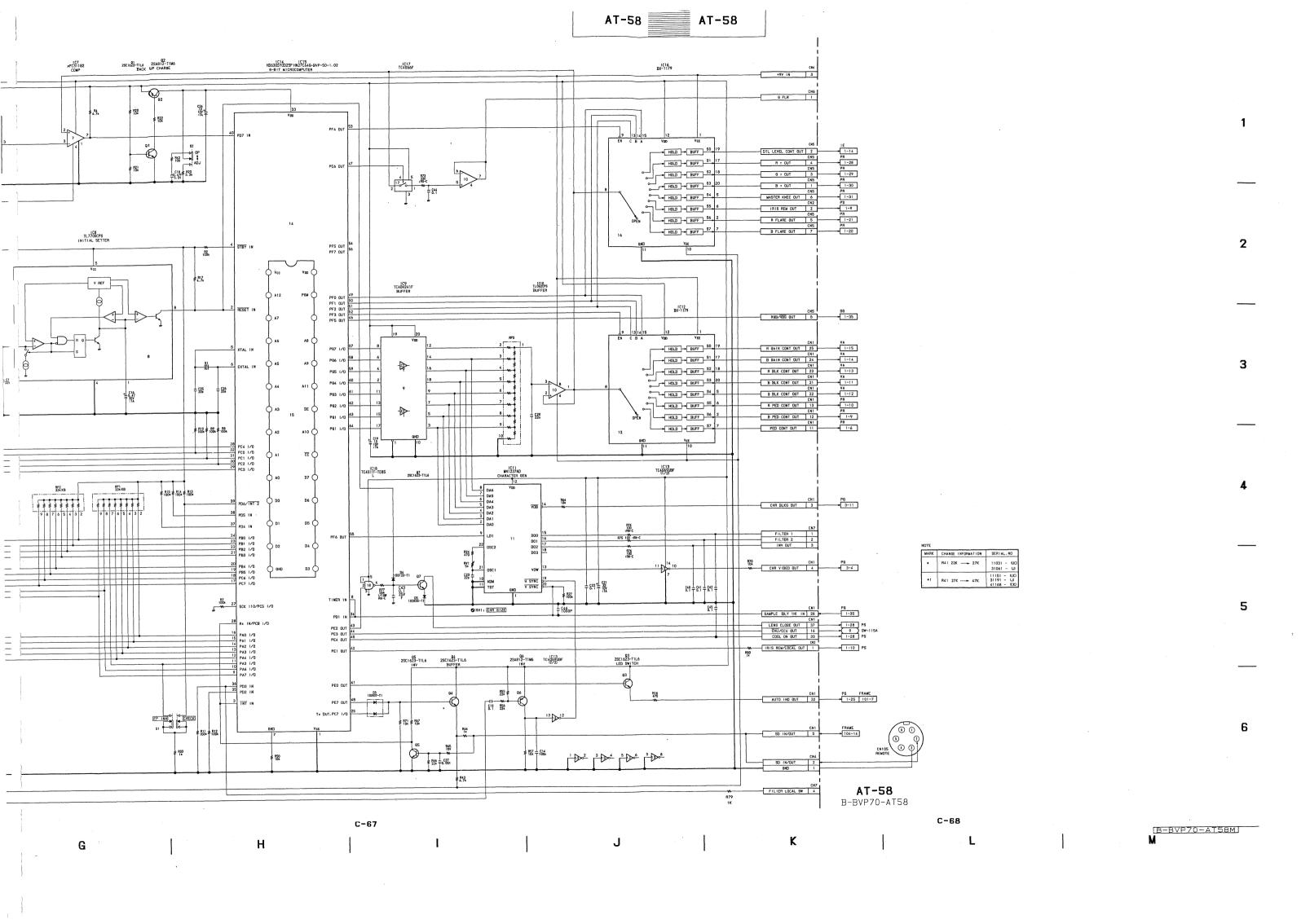
C-64 (b)

Ε

BVP-70 (J, UC) BVP-70P (EK)

C-63 (b)





RG-20/20P

RG-20/20P

C-70

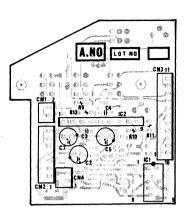
В

C-69

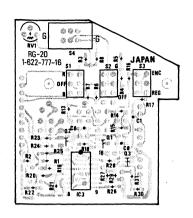
D

Ε

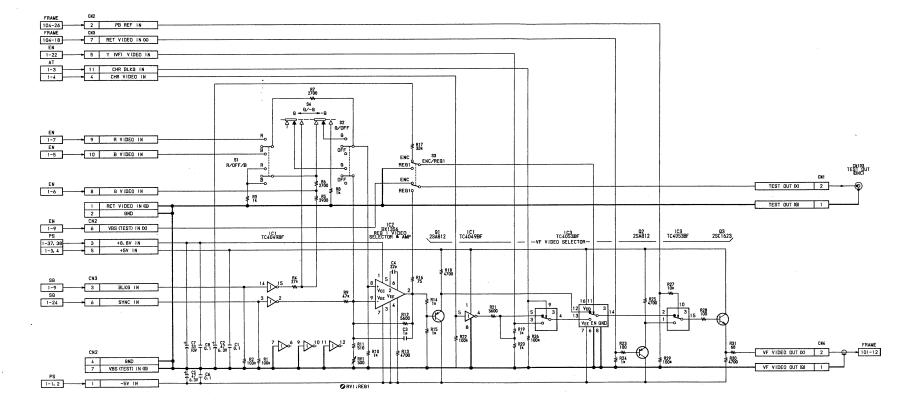
RG-20/20P BOARD



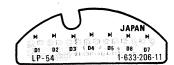
1-622-777-16 SOLDERING SIDE



1-622-777-16 SOLDERING SIDE



LP-54 BOARD

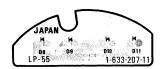


BOX 2008 00 800 DEPRING SIDE



1.633 206-11 SOLDERING SIDE

LP-55 BOARD



633-20741 SOLDERING SIDE



1-633-207 HT SOLDERING SIDE

LP-56 BOARD



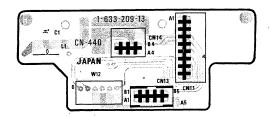
TEST SON TO SOLDE MING SIDE



1 633-208-12 SOLDERPHO SIDE

B-BVP70-VIEWFINDER/MOUNT

CN-440 BOARD



1-633-209-13 SOLDERING SIDE

SW-425 BOARD

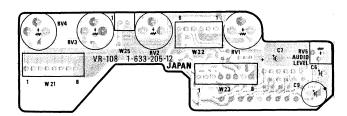


1633-210-11 SOLDERING SIDE

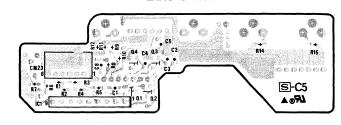


1632-210-11 SOLDERING SIDE

VR-108 BOARD

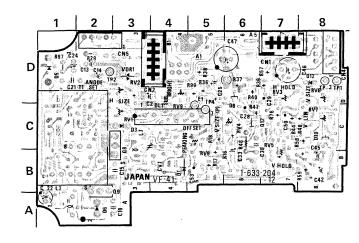


1-633-205-12 SOLDERING SIDE

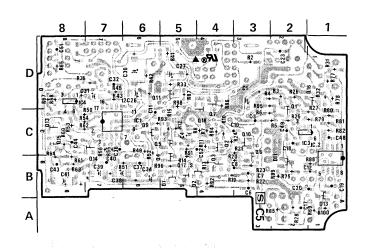


1 933-205-12 SOLDERING SIDE

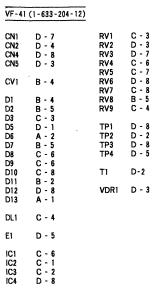
VF-41 BOARD



1-633-204-12 SOLDERING SIDE



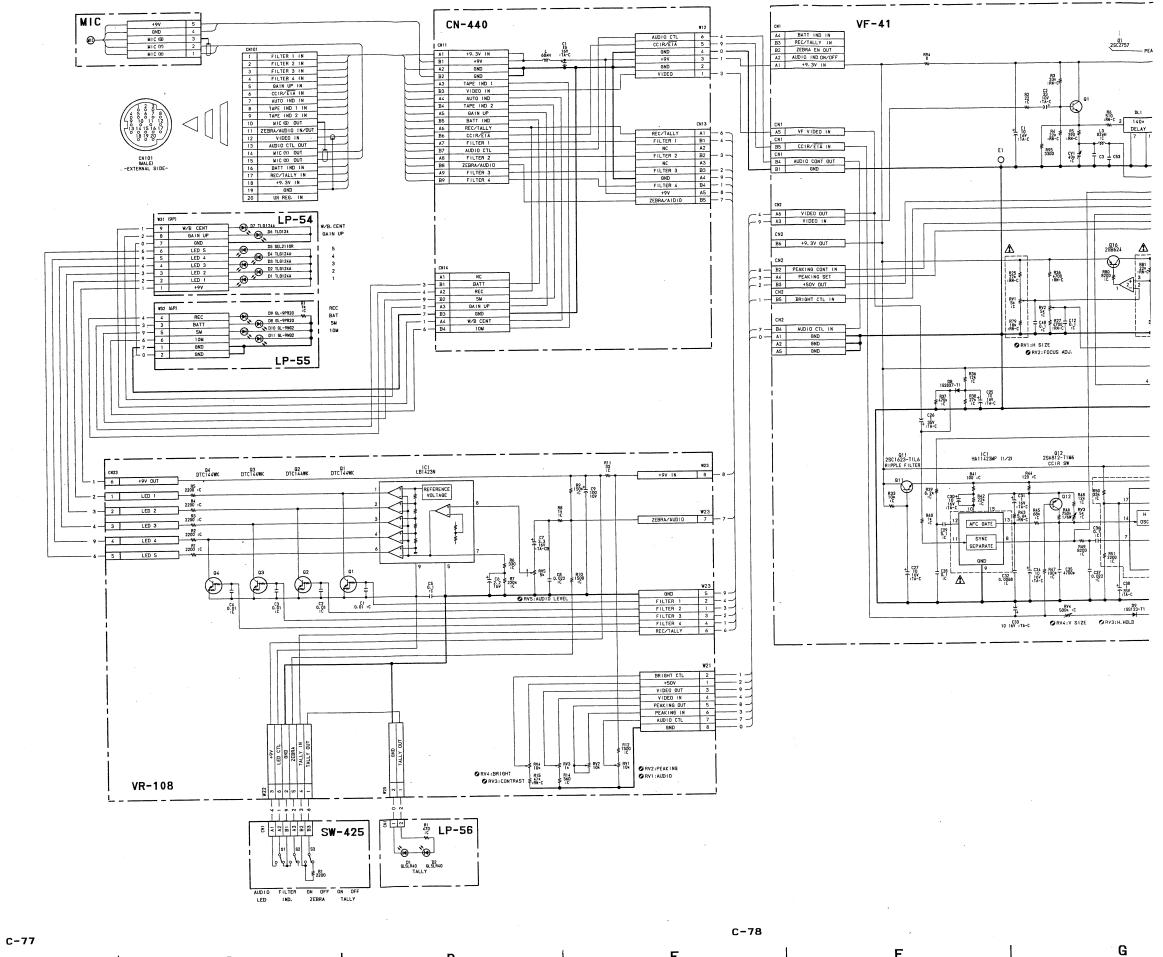
1-633-204-12 SOLDERING SIDE







CN-440 BOARD LP-54 BOARD LP-55 BOARD LP-56 BOARD SW-425 BOARD VF-41 BOARD VR-108 BOARD



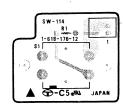
BVP-70 (J, UC) BVP-70P (EK)

D .

F

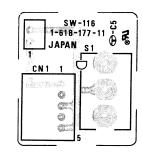
HN-135 BOA

SW-114 BOARD



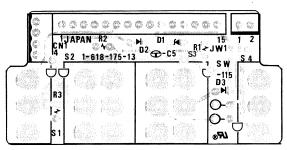
1-618-176-12 SOLDERING SIDE

SW-116 BOARD



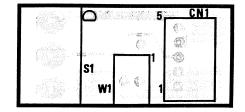
1-618 177-11 COMPONENT SIDE 1-618-177-11 SOLDERING SIDE

SW-115A BOARD



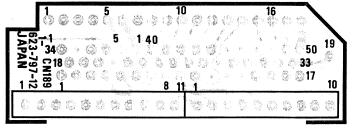
1-618-175-13 COMPONENT SIDE 1-618-175-13 SOLDERING SIDE

SW-256 BOARD

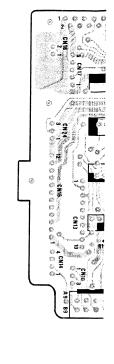


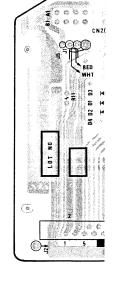
1-623-749-12 COMPONENT SIDE 1-623-749-12 SOLDERING SIDE

CN-189 BOARD



1 623 797 IZ COMPONENT SIDE 1-623-797-12 SOLDERING SIDE





1-630-558-11 SC

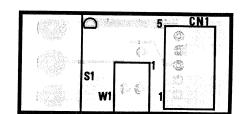
В

D

E

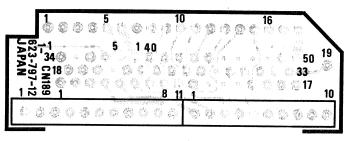
C-81

SW-256 BOARD



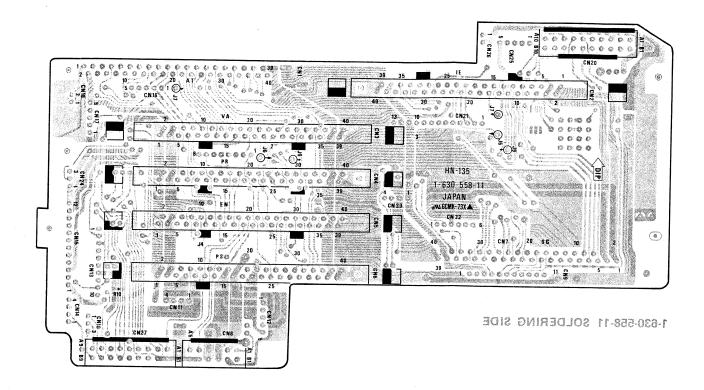
1 623 749 12 COMPONENT SIDE 1-623-749-12 SOLDERING SIDE

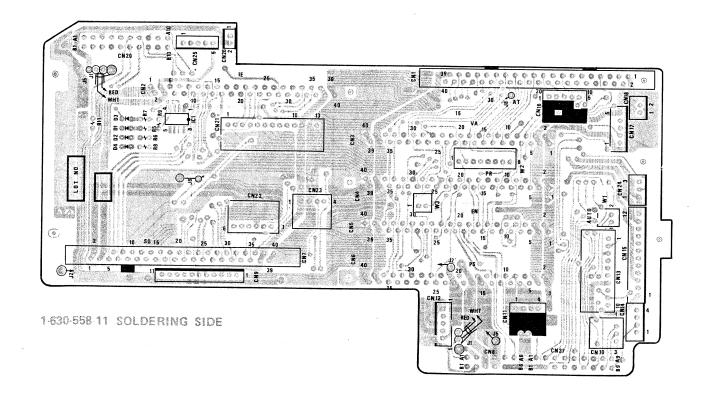
CN-189 BOARD

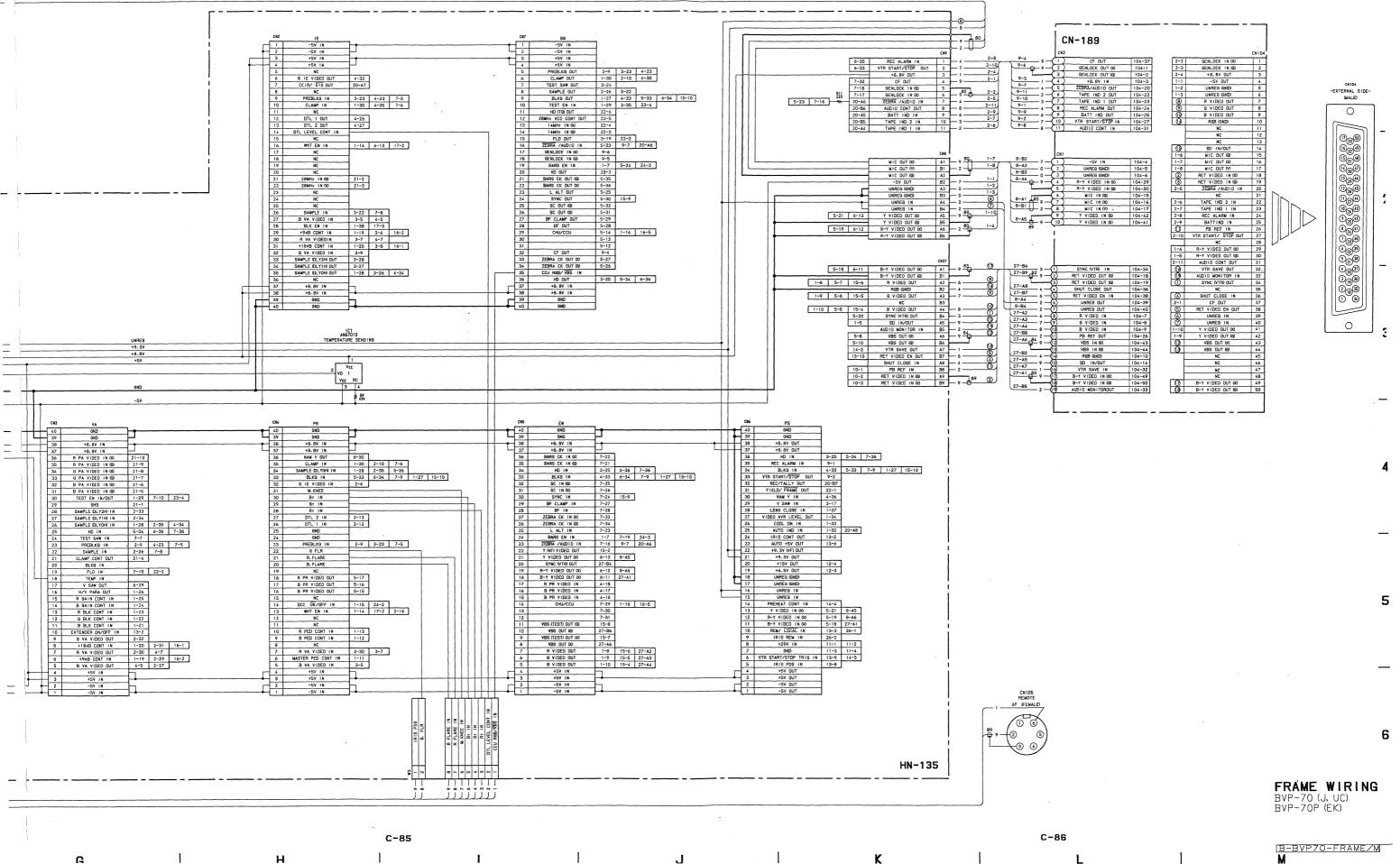


1 923 797 12 COMPONENT SIDE 1-623-797-12 SOLDERING SIDE

HN-135 BOARD







SECTION D SPARE PARTS

PARTS INFORMATION

1. Safety Related Component Warning

Components identified by shading marked with ! on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

- 2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts." This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present." Regarding engineering parts and diagrams changes in our engineering department, refer SECTION 9. CHANGE INFORMATION.
- 3. The parts marked with "S" in the SP column of the exploded views and electical spare parts list are nomally required for routine service work. Orders for parts marked with "O" will be processed, but allow for additional delivery time.
- 4. Item with no parts number and/or no description are not stocked because they are seldom required for routine service.

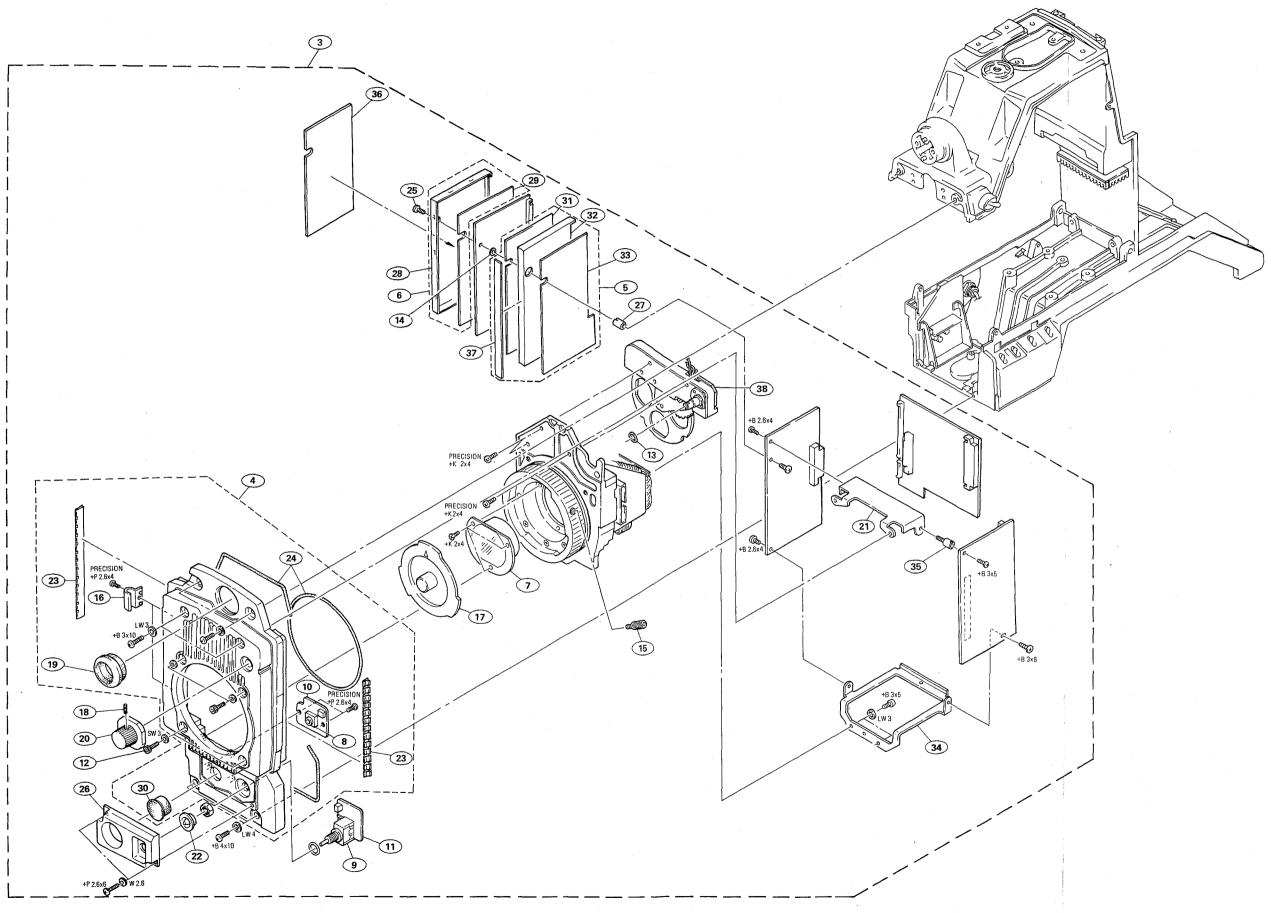
5. Abbreviation

REF.No.	DESCRIPTION	REF.No.	DESCRIPTION	REF.No.	DESCRIPTION
С	CAPACITOR	IC	IC	R	RESISTOR
CN	CONNECTOR	L	INDUCTOR .	RV	VARIABLE RESISTOR
CP	COMBINATION PARTS	- LV	VARIABLE INDUCTOR	T	TRANSFORMER
l D	DIODE	Q	TRANSISTOR	VDR	OSCILLATOR
FB	FERRITE BEAD RIND	S	SWITCH	X	OSCILLATOR
FL	FILTER				

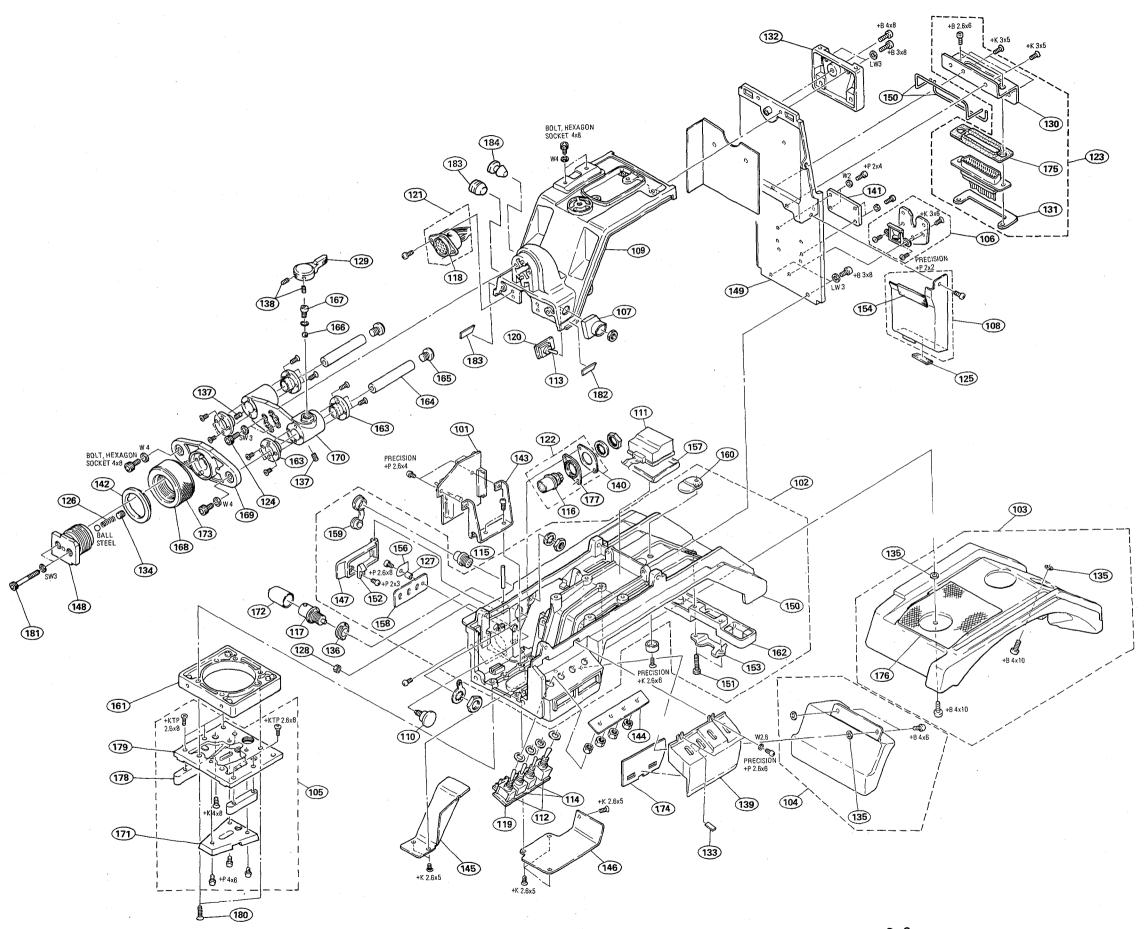
- All capacitors are in micro farads unless otherwise specified.
- All inductors are in micro henries unless otherwise specified. All resistors are in ohms.

EXPLODED VIEW

FRONT	ASS'Y		
No.	Parts No.	SP	Description
3 4 5 6 7	A-7575-153-A A-7575-154-A A-7575-145-A A-7575-146-A A-7612-355-A X-3710-064-3 X-3710-067-3 1-547-360-11	s s s s o o	CCD UNIT (N) (J,UC) FOR BVP-70 CCD UNIT (P) (EK) FOR BVP-70P CCD UNIT-IS (N) (J,UC) FOR BVP-70IS CCD UNIT-IS (P) (EK) FOR BVP-70ISP PANEL ASSY, FRONT CASE ASSY, SHIELD COVER ASSY, SHIELD FILTER UNIT, OPTICAL
8 9 10 11 12	1-552-539-11 1-554-395-11 1-618-176-12 1-618-177-11 2-623-773-11	s s o o s	SWITCH, KEY BOARD "VTR START" SWITCH, TOGGLE "A W/B BAL" PRINTED CIRCUIT BOARD "SW-114" PRINTED CIRCUIT BOARD "SW-116" BOLT (M3x8), STAINLESS
13 14 15 16 17	3-146-316-21 3-699-595-00 3-678-629-00 3-678-684-00 3-699-048-01	s s o s	RING, RUBBER WASHER (2), STOPPER LEVER, MOUNT HOLDER, CABLE CAP, MOUNT
18 19 20 21 22	3-701-505-00 3-710-024-01 3-710-054-01 3-710-057-02 3-711-705-01	5 0 5 0	SET SCREW, DOUBLE POINT 3x3 PACKING, VF KNOB, FILTER STAY (T), SHIELD PLATE CAP, DROP PROTECTION
23 24 25 26 27	3-711-714-11 3-711-715-01 3-711-767-02 3-734-513-01 3-734-514-01	0 S S	RUBBER, SHIELD SCREW, STOPPER GUARD (F2), SWITCH
28 29 30 31 32	3-734-515-03 3-734-516-04 3-734-517-04 3-734-518-02 3-734-519-03	0 0 5 0	SHEET INSULATING SHIELD CASE RUBBER, VTR START STOP SHEET INSULATING SHIELD CASE
33 34 35 36 37	3-734-520-01 3-734-528-01 3-734-535-02 3-734-593-02 3-742-206-01		SHEET INSULATING SHIELD CASE STAY (B4), SHIELD PLATE SUPPORT (STAY T) SHEER, SHIELD COVER SHEET (F), SHIELD COVER
38	3-707-398-01		DISK UNIT, FILTER



CHASSIS BLOCK



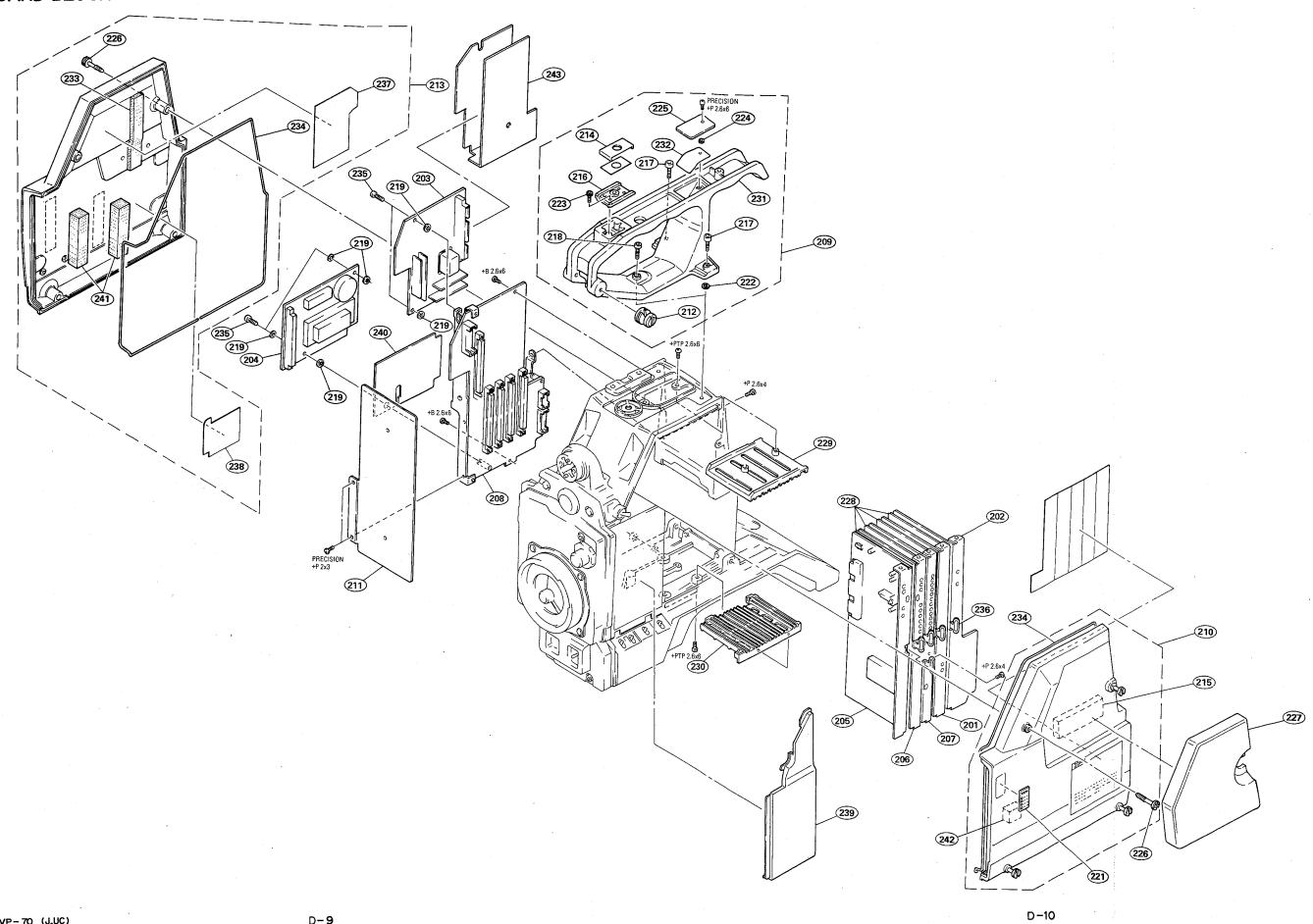
CHASS	IS	BL	0.	C	K
			~~	-	

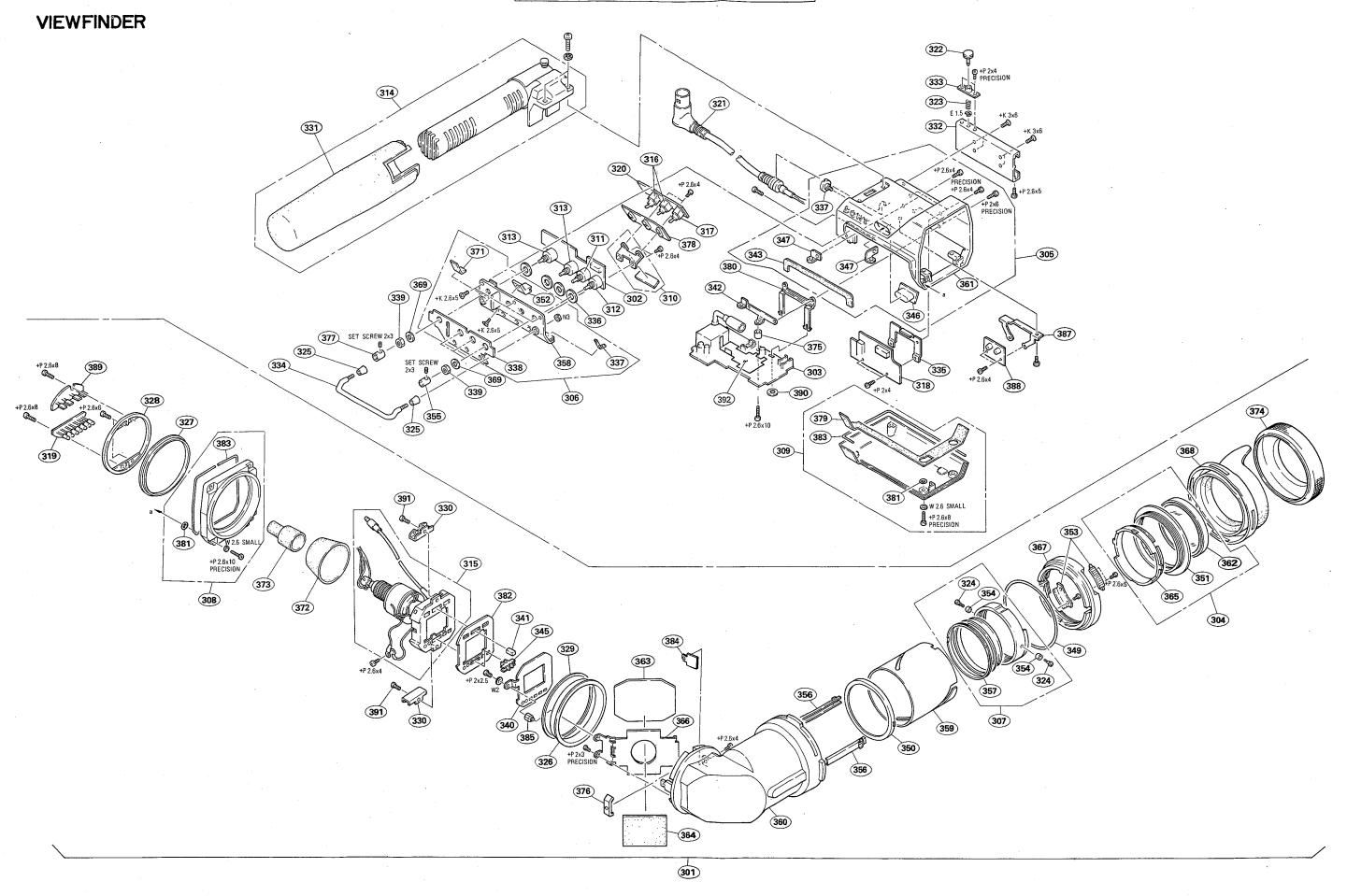
No.	Parts No.	SF	Description	No.	Parts.No.	SI	P Description
101 102 103 104	A-7513-594-A A-7550-049-C A-7612-312-C A-7612-321-A	0 0 8 8	CHASSIS BLOCK ASSY, BASE PAD ASSY (2), SHOULDER PAD (2) (SMALL), SHOULDER	147 148 149 150	3-710-039-03 3-710-047-04	0 S 0	LID (A), B COVER, SWITCH SHOE, SLIDE PLATE, REAR CHASSIS, BASE
105 106 107 108 109	X-3710-026-1 X-3710-029-1 X-3710-038-1 X-3710-042-3	0 8 0	STOPPER ASSY GUARD ASSY, SHUTTER CASE ASSY, SHIELD	151 152 153 154 155	3-710-093-01 3-711-703-01 3-711-704-01 3-711-715-01	0 0 0	COVER, RUBBER RUBBER SHIELD
110 111 112	1-223-165-00 1-466-158-13 1-554-356-00	s s s	CONVERTER UNIT, DC-DC SWITCH, TOGGLE "CAMERA/VTR' "WHT BAL"	157 158 159 160	3-711-727-01 3-711-753-01 3-711-754-03 3-711-755-01 3-711-760-01	0	SPRING, LEAF COVER, INSULATING, CONVERTER PLATE (2), INDICATION, RG COVER, P-P SPRING
113 114 115	1-554-396-00 1-554-400-00 1-561-233-21	s s	SWITCH, TOGGLE "GAIN" "OUTPUT/DCC" CONNECTOR, 6P, FEMALE "REMOTE"	161 162 163 164 165	3-711-789-01	0	SPACER, P5 SPACER, REAR SPACER, (A) ARM SCREW
116 117 118 119 120	1-562-221-21 1-562-261-21 1-565-051-11 1-618-175-13 1-623-749-11	s 0 0 0	CONNECTOR, COÁXIAL (BNC) "TEST OUT" CONNECTOR, ROUND (WITHC) 20P "VF" PRINTED CIRCUIT BOARD "SW-115A" PRINTED CIRCUIT BOARD "SW-256"	166 167 168 169 170	3-711-794-01 3-711-795-01 3-711-796-03 3-711-797-06	0	CUSHION, (STOPPER) PIN, STOPPER RING (B), LOCK TABLE. FIXED, VF SHOE TABLE, FIXED, VF SLIDE
121 122 123 124 125	1-937-212-21 1-937-218-11 1-939-723-15 2-990-375-11 3-143-206-00	0 0 0 s s	HARNESS (LEŃS) HARNESS (50P PC BOARD TYPE) BOLT M3x10, HEXAGON SOCKET CUSHION A, STOPPER	171 172 173 174 175	3-716-391-01 3-717-823-01 3-720-919-01 3-720-960-01 3-720-961-01	s 0 0	WEDGE, MOUNTING COVER, BNC RUBBER, LOCK RING PACKING, SWITCH PACKING, 50P
126 127 128 129 130	3-641-622-00 3-659-365-00 3-664-519-00 3-673-046-00 3-675-902-21	s s o s	SPRING, COMPRESSION SPACER (4x3) NUT (M4) LEVER, LOCK	176 177 178 179 180	3-720-964-01 3-725-297-01 3-729-064-01 3-729-065-01 3-729-072-11	0 0 8	NET (2) SPACER (LENS) GUARD (A), CAMERA SHOE SHOE (A), CAMERA SCREW, +K4x20
131 132 133 134 135	3-675-929-00 3-675-958-12 3-678-601-01 3-682-760-01 3-687-116-01	0 0 0	BRACKET (A), CONNECTOR NUT (50P), PLATE SHOE, C LABEL, SWITCH SCREW (M7-0.75), ADJUSTMENT WASHER (4), STOPPER	181 182 183 184 185	4-904-818-01 3-742-218-01 3-742-219-01 3-644-002-03 3-683-255-01	0	BOLT (3x25), HEXAGON HOLE PACKING, RIGHT PANEL PACKING, LEFT PANEL CUSHION, HANDLE CAP
136 137 138 139 140	3-692-444-01 3-701-506-01 3-701-508-00 3-710-001-01 3-710-002-01	0 s s 0	SETSCREW, DOUBLE POINT 3x4				
141 142 143 144 145	3-710-017-01 3-710-018-01 3-710-026-03 3-710-027-01 3-710-029-02	0 8 0 0	PLATE, PROTECTION COLLAR, SLIDE PLATE, FIXED, RG-14 SHEET, BLIND LID (B), B				

BOARD BLOCK

No.	Parts No.	SP	Description
201	A-7513-618-A	0	MOUNTED CIRCUIT BOARD "EN-69" (J,UC)
	A-7513-619-B	0	MOUNTED CIRCUIT BOARD "EN-69P" (EX)
202	A-7515-126-A A-7513-768-A	0	MOUNTED CIRCUIT BOARD "PS-224" MOUNTED CIRCUIT BOARD
203			"SG-143" (J,UC) MOUNTED CIRCUIT BOARD
	A-7513-994-A	0	"SG-143AP" (EX)
204 205	A-7515-127-A A-7513-989-A	0	MOUNTED CIRCUIT BOARD "AT-58" MOUNTED CIRCUIT BOARD
	A-7513-990-A	0	"IE-25" (J,UC) MOUNTED CIRCUIT BOARD
			"IE-25P" (EX)
206 207	A-7513-991-A A-7515-115-A	0	MOUNTED CIRCUIT BOARD "VA-85" MOUNTED CIRCUIT BOARD
	A-7515-116-A	0	"PR-138B" (UC) MOUNTED CIRCUIT BOARD
208	A-7513-995-B	0	"PR-138A" (EK,J) MOUNTED CIRCUIT BOARD "HN-135"
209 210	X-3710-003-6 X-3710-005-9	0 S	HANDLE ASSY PANEL ASSY, RIGHT
211	X-3710-007-1	0	PLATE, ASSY, SHIELD, EN
212	X-3710-037-1	0	SUSPENSION ASSY (C)
213 214	X-3710-065-1 2-277-468-01	s o	PANEL ASSY, LEFT PLATE, ORNAMENTAL, CAMERA SHOE
215	2-352-317-01	0	CUSHION, PCB
216 217	3-657-700-00 3-657-705-00	s s	BRACKET, ACCESSORY BOLT (M4x10), HEXAGON HOLE
218	3-657-705-21	S	BOLT (M4x15), HEXAGON HOLE
219 221	3-669-595-00 3-678-607-02	s o	WASHER (2), STOPPER LABEL, FILTER
222	3-687-116-01	0	WASHER (4), STOPPER
223 224	3-689-039-01 3-701-439-11	s s	BOLT (M2x6), HOLE, HEXAGON WASHER
225	3-710-015-01	0	LID, HANDLE
226	3-729-091-01	s	SCREW (M4x17.5)
227 228	3-710-032-01 3-710-033-02	s o	PAD PLATE, SHIELD, PC BOARD
229	3-710-040-02	0	GUIDE (B)
230 231	3-710-041-01 3-710-044-01	0	RAIL (T), GUIDE HANDLE
232	3-710-053-02	0	
233	3-710-076-01	0	CUSHION
234 235	3-711-715-01 3-711-767-01	o s	RUBBER, SHIELD SCREW, STOPPER
236	3-711-775-01	0	LEVER, PULL
237	3-711-783-01 3-711-798-02	0	LAVEL, (SG), PC BOARD LAVEL, (AT-2), PC BOARD
238 239	3-711-798-02	0	COVER, OPTICS BLOCK
240 241	3-742-212-01 4-889-014-00	0	PLATE, SHIELD, AT CUSHION, PCB
			·
242 243	9-911-845-XX 3-742-213-11	s 0	RUBBER (A), ABSORBENT PLATE, SHIELD SG

BOARD BLOCK





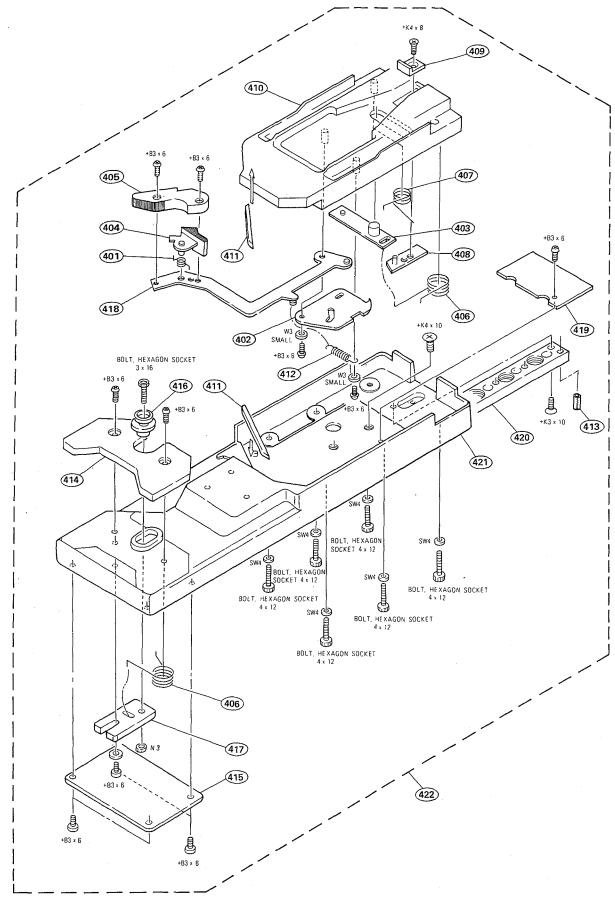
VIEW	FIN	DER
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No. Parts No.	SP	Description	No.	Parts No.	SP Description
<u>^</u> 301	0	VF COMPLETE ASSY Ser No. 10221 - 11010 (UC)	341	3-720-970-01	s PLATE (A), LIGHT Interception
		30356 - 31060 (J)	342	3-720-974-04	o BRACKET (2), PC BOARD
		40386 - 40601 (EK)	343	3-720-977-01	s PACKING (A), DROP PROTECTION
A-7403-130-A	^	VF COMPLETE ASSY	344	3-720-978-01	s PACKING (B), DROP PROTECTION
A-7403-130-A	U	Ser No. 11031 - (UC)	345	3-720-997-02	s PLATE, LIGHT INTERCEPTION
		31061 - (J)	040	0 / 20 00 / 02	5 , E. (12, E. (21, E.
		41001 - (EK)	346	3-722-475-04	o COVER (A)
		4100(- (ER)	347	3-722-476-01	o NUT, PLATE
302 A-7515-106-A		MOUNTED CIRCUIT BOARD	349	3-722-478-01	s RING, O
302 A-7515-106-A	٠	"VR-108"	350	3-722-479-01	o GUIDE, TUBE
		****	351	3-722-480-01	o RING
⚠ 303 A-7515-107-A	Ω	MOUNTED CIRCUIT BOARD			
<u> </u>	·	"VF-41"	352	3-722-481-04	o HOLDER, PC BOARD
***************************************			353	3-722-482-03	o RETAINER, RING
304 A-7612-356-B	٥	PROTECTOR ASSY, MC	354	3-722-485-01	o ROLLER, SLIDE
305 X-3710-050-5		VF (MAIN) BLOCK ASSY	355	3-722-486-01	s KNOB
			356	3-722-489-01	o GUIDE, ROLLER
306 X-3710-055-3	0	BRACKET ASSY (B), VR, SW			
307 X-3722-365-2		LENS ASSY	357	3-722-492-01	o HOLDER, (B) LENS
308 X-3722-366-6	0	TUBE ASSY, VF ROTARY GUIDE	358	3-722-494-01	o BRACKET, VR SW
309 X-3722-368-5	0	LID ASSY, VF	359	3-722-497-01	o TUBE
310 X-3722-426-1	0	BRACKET ASSY, SW	360	3-723-001-02	o TUBE, VF
			361	3-723-002-12	o VF (MAIN)
311 1-238-290-11	s	RES, VAR, CARBON 1K			
		"CONTRAST"	362	3-723-069-02	o PROTECTOR, MC
312 1-238-293-11	s	RES, VAR, CARBON 10K	363	3-729-099-01	o MIRROR
		"BRIGHT"	364	3-723-073-01	o CUSHION, MIRROR
313 1-238-296-11	S	RES, VAR, CARBON 10K	365	3-723-075-01	o RING, FILTER
		"AUDIO LEVEL CH-1" "PEAKING"	366	3-742-001-01	o HOLDER (2), MIRROR
314 1-542-106-11	s	MICROPHONE			PING AR WOTHERT
			367	3-723-077-01	o RING, ADJUSTMENT
<u> </u>	S	1.5 "CRT ASSY"	368	3-723-079-01	s EYE CUP
			369	3-724-744-03	o WASHER
316 1-570-984-11	S	SWITCH, TOGGLE	371	3-724-746-01	o SHEET (B), INSULATING
		"AUDIO/FILTER" "ZEBRA"	372	3-725-220-02	o TUBE (A), CRT
317 1-570-985-11		SWITCH, TOGGLE "TALLY"	272	3-725-221-04	o TUBE (B), CRT
318 1-633-209-11	0	PRINTED CIRCUIT BOARD	373 374	3-725-221-04	o PACKING, RING
010 1 600 006 11	_	"CN-440" PRINTED CIRCUIT BOARD	375	3-725-257-01	o BOSS
319 1-633-206-11	U	"LP-54"	376	3-725-258-03	o STOPPER, ROTARY
320 1-633-210-11	^	PRINTED CIRCUIT BOARD	377	3-725-277-01	s KNOB (B)
320 1-033-210-11	٠	"SW-425"	0.,	0 ,20 2,, 0,	· · · · · · · · · · · · · · · · · · ·
		011-420	378	3-725-278-01	s PACKING (SW), DROP PROTECTION
321 1-940-868-11	•	HARNESS (VF CABLE)	379	3-725-280-01	s PACKING (A), DROP PROTECTION
322 2-277-457-00		KNOB, STOPPER	380	3-725-282-03	o HINGE, PC BOARD
323 2-277-466-01		SPRING, COMPRESSION	381	2-115-882-01	o RING
324 3-335-207-01		SHAFT, MOTOR	382	3-729-062-01	o SPACER, MASK
325 3-657-654-00		RING, ORNAMENTAL	. –		
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	_	·, · · · · · · · · · · · · · · · · · ·	383	3-729-701-21	 RUBBER, (CARBON), CONDUCTIVE
326 3-672-241-00	0	RING (B), SLEEVE	384	3-734-739-01	o SHEET, INSULATING, MASK
327 3-734-760-01		RING	385	3-734-740-01	o SUPPORT
328 3-680-595-01		SUPPORT, ROTARY	387	3-722-474-05	s BRACKET, LP
329 3-685-118-01		SPACER, RING	388	1-633-208-11	 PRINTED CIRCUIT BOARD "LP-56"
330 3-685-129-01	0	SPRING (N), LEAF, VF			
		. ,	389	1-633-207-11	 PRINTED CIRCUIT BOARD "LP-55"
331 3-707-587-01	s	SCREEN ASSY, WIND	390	3-672-250-01	o RING, O (M2.6)
332 3-710-007-02		GUIDE, VF SLIDE	391	7-627-556-57	s SCREW + P2.6x5
333 3-710-008-02	S	HOUSING, STOPPER			Ser No. 10221 - 11060 (UC)
334 3-715-342-02		GUARD, CONNECTOR			30356 - 31100 (J)
335 3-742-205-01	0	BRACKET, CN			40386 - 41075 (EK)
				3-165-162-00	s SCREW (2.6x5) (TYPY1)
336 3-725-279-01	0	PACKING (VR), DROP			Ser No, 11061 - (UC)
		PROTECTION			31101 - (J)
337 3-720-946-01		PIN, MICROPHONE STOPPER	000	0.400.007.01	41076 - (EK)
338 3-720-954-02	0	LABEL, SW, VR	392	3-166-307-01	o PLATE, SHILD
339 3-685-104-01		NUT (M6), CONTROL			
340 3-742-242-01	0	PLATE (B), DISPLAY			

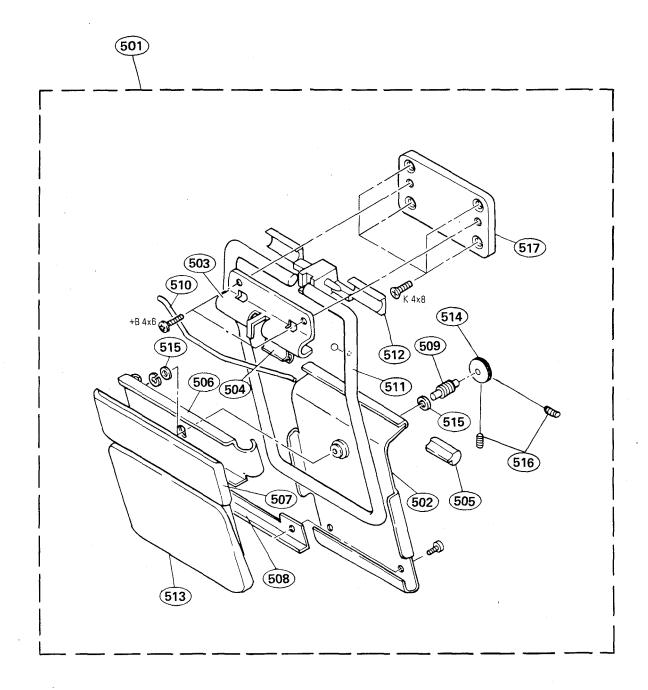
VCT-14	ļ
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No.	Parts No.	SP	Description
401	2-381-631-01	0	SPRING
402	2-381-632-01	ρ	ARM, LOCKER
403	2-381-633-01		SOLENOID
	2-381-635-01		LEVER, LOCK
405	2-381-636-01	0	KNOB
406	2-381-637-01	n	SPRING
	2-381-638-01		SPRING
	2-381-640-01	-	
	2-381-641-01		
	2-381-642-02		MOUNT
710	2 001-042-02	U	MOONI
411	2-381-648-01	0	INSULATOR, KNOB
412	2-381-652-01	0	SPRING, TENSION
413	2-381-654-01	0	PIN, SPRING
414	3-678-704-00	0	SPACER
415	3-720-906-01	0	LID (S), REAR
416	3-720-907-01	٥	DIN (C) DEAD
	3-720-908-01	0	PIN (S), REAR
	3-720-908-01	0	TABLE (S), PIN, REAR
			KNOB, CRANK
	3-720-910-01		SHEET, SLIDE
420	3-720-911-01	0	BASE, TRIPOD FITTING SCREW
421	3-720-912-01	0	FRAME (S)
422	OPTIONAL ACC	ESS	ARY: TRIPOD ADAPTOR "VCT-14"

TRIPOD ADAPTOR



PAD ASSY



PAD ASSY

No.	Part No. SP	Description
502 503	3-680-507-00 o	PAD ASSY (2) SUPPORT ASSY, PAD BTACKET (A), STAY PAD (A), STOPPER PAD (B), STOPPER
507 508 509	3-680-510-00 o 3-680-511-03 o 3-680-512-00 o 3-680-515-00 o 3-680-517-00 o	PAD (B) CLAMP, STAY SCREW, STAY ADJUST
512 513 514	3-680-518-00 o 3-680-519-00 o 3-680-520-03 o 3-680-533-00 o 3-701-441-21 s	SUPPORT, STAY PAD (A) KNOB, ADJUSTMENT
516 517		SET SCREW, DOUBLE POINT 3X3 SPACER (2), SHOULDER

SCREWS

+B	+8 Bzn-N			+8		+K		+K tzn-N		+K		+P
Bzn-N	BZ	:n-N	}	Cr-N) B:	zn-N	"	SZN-IN	Cr-N		Bzn-N	
							$ \Theta $					
7-621-000-00 -	7-682-13	100-00 —	7-682-	7-621-000-00		7-682.	7-682-000-00		7-682-000-00		/ 7·682·000·00	
SIZE Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.
2 × 3 772-00 × 4 772-10 × 5 772-20 × 6 772-30 × 8 772-40 × 10 772-50 × 12 772-60 × 14 772-70 × 16 772-80 × 20 - 2.6 × 3 775-00 × 4 775-10 × 5 775-20 × 6 773-95 × 8 775-40 × 10 775-50 × 11 775-60 × 14 775-70 × 16 775-80 × 20 775-90	3 x 3 x 4 x 5 x 6 x 8 x 10 x 12 x 14 x 16 x 20 x 30 4 x 4 x 5 x 6 x 8 x 10 x 12 x 14 x 15 x 6 x 8 x 10 x 20 x 30 5 x 8 x 10 x 12 x 14 x 15 x 16 x 20 x 30 5 x 10 x 12 x 14 x 15 x 16 x 10 x 10	544-09 545-09 546-09 548-09 548-09 550-09 551-09 552-09 553-09 558-09 561-09 562-09 564-09 566-09 566-09 577-09 578-09 578-09 578-09	3 x 3 x 4 x 5 x 6 x 8 x 10 x 12 x 14 x 16 x 20 4 x 4 x 5 x 6 x 8 x 10 x 12 x 14 x 16 x 20 5 x 8 x 10 x 12 x 14 x 16 x 20 x 12 x 14 x 16 x 10 x 10	544-04 545-04 546-04 547-04 548-04 550-04 551-04 552-04 553-04 560-04 561-04 562-04 563-04 566-04 575-04 576-04 576-04 578-04 578-04	2 × 3 × 4 × 5 × 6 × 8 × 10 × 12 × 14 × 16 × 20 2.6 × 4 × 5 × 6 × 8 × 10 × 12 × 14 × 16 × 20 2.5 × 4 × 10 × 12 × 14 × 16 × 20 2.5 × 16 × 20 × 10 ×	555-10 591-00 555-30 555-40 555-60 555-70 - 559-20 559-30 592-10 592-10 592-20 592-30 560-00 560-00	3 × 4 × 5 × 6 × 8 × 10 × 12 × 14 × 16 × 20 4 × 6 × 8 × 10 × 12 × 14 × 15 × 20	245-09 246-09 247-09 249-09 250-09 251-09 252-09 261-09 260-09 262-09 263-09 265-09 266-09	3 x 4 x 5 x 6 x 8 x 10 x 12 x 14 x 16 x 20 4 x 6 x 8 x 10 x 12 x 14 x 16 x 20	245-04 246-04 247-04 248-04 259-04 251-04 252-04 263-04 262-04 263-04 266-04	3 x 3 x 4 x 5 x 8 x 10 x 12 x 14 4 x 4 x 5 x 6 x 8 x 10 x 12 x 14 1 x 16 x 20	144-09 145-09 146-09 147-09 148-09 149-09 150-09 151-09 158-09 160-09 161-09 165-09 165-09 166-09

	+PS ≥n-N	PRECISION +K PRECISION +K Bzn·N Cr·N				PRECISION +P PRECISION +P Bzn-N Cr-N			+P Bzn-N		TOTSU P BZn-N NON SLIT			
⊕ €	<i>}</i>	⊕ [
7-682-	200-00	7-627-	:aa.ac —	/ 7-627·D	.00.00 —	7.627-	7-627-000-00		7-627-000-00		7-621-000-00		7.685.000-00	
SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	SIZE	Parts No.	
2 x 4	253-00	1.7 x 1.8	_	1.7 x 1.8	-	1.7 x 1,6	552-18	1.7 x 1.6	_	2 x 3	255-10	2 × 4	102-19	
×5	253-10	x 2	450-28	x 2	l !	~x 1.8	-	x 1.8	[-	x 4	255-20	2 × 5	103-19	
× 6	253-20	× 2,2	1 - 1	× 2.2	- 1	x 2	552.28	x 2	552-27	× 5	283-00	2 × 6	104-19	
× 8	253-30	× 2.5	450-48	x 2,5] -	x 2.2	-	x 2.2	552-87	× 6	255-40	2 × 8	105-19	
x 10	253-40 253-50	x 2.8		× 2.8	-	x 2.5	552-08	x 2.5	552-07	×8	255-50	2 × 10	1.06-19	
x 12	253-50	x 3	450-58	×3	-	x 2.8] - [× 2.8	T	× 10	283-10	2 × 12	107-19	
2.6 × 4	253-90	× 3.5	-	× 3.5	-	× 3	552-38	×3	552-37	× 12	283-70		404.40	
x 5	254-00	x 4 x 4.5	450.78	x 4 x 4.5	- 1	x 3.5	552-78	× 3.5	1	× 14] -	2.6 × 4 2.6 × 5	131-19 132-19	
× 6	254-10	x 4.5	450-98	x 4.5	-	× 4	552-48	x 4 x 4.5	552-47	× 16	256-20	2.6 × 6	133-19	
× 8	254-20	x 5.5	450-96	x 5.5	1 <u>-</u> 1	x 4.5 x 5	552-58	x 4.5	552-67 552-57	× 20	256-20	2.6 x 8	134-19	
x 10	254-30	× 6	1 [1	x 6	1 - 1	x 5.5	552-58	x 5.5	557-07	2.3 x 5		2.6 × 10	135-19	
x 12	254-40					x 5,5	[x 6	552-77	×6	1 _ 1	2.6 × 12	136-19	
x 14	254-90	2 x 2	452-08	2 x 2	452-07				332-77	× 8	1 _ 1	2.6 × 14	137-19	
x 16	254-50	× 2.2	452-88	x 2.2	452-87	2 × 1.8	554-38	2 x 1.8	554-37	x 10	_	2.6 × 16	138-19	
× 20	254-60	x 2.5	452-48	x 2.5	_	× 2	553-18	x 2	553-17	x 12	1 - 1			
	+	× 2.8	-	× 2.8	1 - 1	× 2.2		x 2.2	554-07	× 14	-		1	
3 × 5	646-09	× 3	452-18	x 3	452-17	x 2,5	553-28	x 2.5	553-27	x 16	-			
× 6	647-09	x 3.5	452-98	x 3.5	1 - 1	x 2.8	554-58	× 2.8		x 20	1 - 1	3 × 5	144-19	
× 8	648-09	× 4	452-28	x 4	452-27	х 3	553-38	x 3	553-37		 	3 × 6	145-19	
× 10	649-09	× 4.5	-	x 4.5	1 - 1	× 3.5	554-18	x 3.5	554-17	2.6 x 3	259-10	3 × 8	146-19	
x 12	650-09	x 5	452-38	x 5	1 - 1	×4	553-48	× 4	553-47	x 4	284-00	3 × 10	147-19	
x 14	651-09	x 5.5	-	x 5.5	-	× 4.5	553.58	x 4.5	553-57	x 5	284-10	3 × 12	148-19	
× 16 × 20	652-09	× 6	452-58	× 6		× 5	554-28	x 5	553-67	× 6	284-20	3 × 14	149-19	
A 20	-	× 7	452-68	x 7	452-67	x 5.5	-	× 5.5	-	x 8	284-30	3 × 16	150-19	
4 × 6		x 8	452-78	x 8	- 1	× 6	553-68	× 6	554-27	× 10	284-40	3 × 18	1	
× 8	-	2.6 × 3.5	_	2.6 x 3.5		x 7	553-88	x 7	553-87	× 12	259-70	3 × 20	151-19	
× 10	1 - 1	2.6 x 3.5	1 - 1	2.6 X 3.5	454-17	× 8	553-98	× 8	553-97	x 14	259-80 260-00	3 × 25	152-19	
× 12	1 _ 1	x 4.5	454-28	x 4.5	454-17	× 10	553.78	x 10	553-77	× 16 × 20	260-20	3 × 30 3 × 35	153-19 154-19	
× 14	_	× 5	454-38	x 5	454-37	2.6 × 2.8	556-08	2.6 x 2,8	556-07	1 20	200.20	3 × 40	155-19	
× 16	1 - 1	× 5.5	1 _	x 5.5	1 -	x 3		x 3	- 550.07			3 × 58	155.15	
× 20	l – I	× 6	1 - 1	x 6	1 - 1	x 3.5	556-28	x 3.5	1			3 ~ 30	1	
	·······	×7	1 - 1	× 7	! _	x 4	556-38	× 4	556-37					
		x 8] -	× 8	_	x 4.5	556-48	x 4.5	- 1			4 × 6	158-19	
		·				× 5	556-58	x 5	556-57			4 × 8	159-19	
						× 5.5	-	x 5.5	-			4 × 10	160-19	
						x 6	556-78	×6	556-77			4 × 12	161-19	
						x 7	-	× 7	ļ - 1			4 × 14	162-19	
						× 8	-	×8	556-97			4 × 16	163-19	
						x 9	-	x 9	1 – 1			4 × 20	164-19	
						× 10	_	× 10	557-47			4 × 25	165-19	
						·		,				4 × 30	166-19	
												4 × 35	167-19	

CAPACITOR, ELECTROLYTIC

Part No.	SP	Description
1-124-463-11 1-124-464-11 1-124-252-11 1-124-465-21 1-124-438-11	S S S S	CAP, ELECT 0.1 20% 50V CAP, ELECT 0.22 20% 50V CAP, ELECT 0.33 20% 50V CAP, ELECT 0.47 20% 50V CAP, ELECT 1.0 20% 50V
1-124-257-11 1-126-162-11 1-124-245-11 1-124-259-11 1-126-157-11	S S S S	CAP, ELECT 2.2 20% 50V CAP, ELECT 3.3 20% 50V CAP, ELECT 4.7 20% 35V CAP, ELECT 4.7 20% 50V CAP, ELECT 10 20% 10V
1-124-233-11 1-126-247-11 1-124-261-11 1-126-153-11 1-124-234-00	\$ \$ \$ \$	CAP, ELECT 10 20% 16V CAP, ELECT 10 20% 35V CAP, ELECT 10 20% 50V CAP, ELECT 22 20% 6.3V CAP, ELECT 22 20% 10V
1-124-248-11 1-124-431-11 1-124-229-00 1-124-242-00 1-126-154-11	S S S	CAP, ELECT 22 20% 35V CAP, ELECT 33 20% 4V CAP, ELECT 33 20% 10V CAP, ELECT 33 20% 25V CAP, ELECT 47 20% 6.3V
1-124-589-11 1-124-584-11	s s	CAP, ELECT 47 20% 16V CAP, ELECT 100 20% 10V

CAPACITOR, TANTALUM

Part No.	SP	Description
1-131-396-00	S	CAP, TANTALUM 0.01 20% 35V
1-131-397-00	S	CAP TANTAL LIM 0.015 20% 35V
1-131-398-00	S	CAP, TANTALUM 0.015 20% 35V CAP, TANTALUM 0.022 20% 35V
1-131-399-00		CAP, TANTALUM 0.033 20% 35V
	S	CAP, TANTALUM 0.047 20% 35V
1-131-400-00	S	CAP, IANTALUM 0.047 20% 35 V
1-131-401-00	S	CAP, TANTALUM 0.068 10% 35V
1-131-341-00	S	CAP, TANTALUM 0.1 10% 35V
1-131-342-00	S	CAP, TANTALUM 0.15 10% 35V
1-131-343-00	S	CAP, TANTALUM 0.22 10% 35V
1-131-344-00	S	CAP, TANTALUM 0.33 10% 35V
1-131-412-00	s	CAP, TANTALUM 0.47 20% 20V
1-131-345-00	s	CAP, TANTALUM 0.47 10% 35V
1-131-410-00	S	CAP TANTALUM 0.68 20% 25V
1-131-346-00	S	CAP, TANTALUM 0.68 20% 25V CAP, TANTALUM 0.68 10% 35V
1-131-413-00	8	CAP, TANTALUM 1.0 20% 20V
1 121 247 00	_	CAP. TANTALUM 1.0 10% 35V
1-131-347-00	S	,
1-131-416-00	S	CAP, TANTALUM 1.5 20% 16V
1-131-348-00	S	CAP, TANTALUM 1.5 10% 35V
1-131-419-00	S	CAP, TANTALUM 2.2 20% 10V
1-131-361-00	S	CAP, TANTALUM 2.2 10% 20V
1-131-349-00	s	CAP, TANTALUM 2.2 10% 35V
1-131-422-00	S	CAP, TANTALUM 3.3 20% 6.3V
1-131-368-00	S	CAP, TANTALUM 3.3 20% 6.3V CAP, TANTALUM 3.3 10% 16V
1-131-356-00	S	CAP, TANTALUM 3.3 10% 25V
1-131-350-00	S	CAP, TANTALUM 3.3 10% 35V
1-131-425-00	s	CAP, TANTALUM 4.7 20% 3.15V
1-131-375-00	S	CAP, TANTALUM 4.7 10% 10V
1-131-363-00	s	CAP, TANTALUM 4.7 10% 20V
1-131-351-00	S	CAP, TANTALUM 4.7 10% 35V
1-131-382-00	S	CAP, TANTALUM 6.8 10% 6.3V
1 121 270 00	_	CAP. TANTALUM 6.8 10% 16V
1-131-370-00	S	CAP, TANTALUM 6.8 10% 16V CAP, TANTALUM 6.8 10% 25V
1-131-358-00	S	
1-131-352-00	S	
1-131-389-00	S	CAP, TANTALUM 10 10% 3.15V
1-131-377-00	S	CAP, TANTALUM 10 10% 10V
1-131-365-00	s	CAP, TANTALUM 10 10% 20V
1-131-353-00	S	CAP, TANTALUM 10 10% 35V
1-131-384-00	S	CAP, TANTALUM 15 10% 6.3V
1-131-372-00	S	CAP, TANTALUM 15 10% 16V
1-131-360-00	S	CAP, TANTALUM 15 10% 25V
1-131-391-00	s	CAP, TANTALUM 22 10% 3.15V
1-131-379-00	S	CAP, TANTALUM 22 10% 10V
1-131-367-00	S	CAP, TANTALUM 22 10% 20V
1-131-386-00	S	CAP, TANTALUM 33 10% 6.3V
1-131-374-00	S	CAP, TANTALUM 33 10% 16V
	٥	
1-131-393-00	S	CAP, TANTALUM 47 10% 3.15V
1-131-381-00	S	CAP, TANTALUM 47 10% 10V
1-131-388-00	S	CAP, TANTALUM 68 10% 6.3V
1-131-395-00	S	CAP, TANTALUM 100 10% 3.15V

RESISTOR, CHIP

Part No.	SP	Description
1-216-295-00	s	RES, CHIP 0 5% 1/10W
1-216-298-00	S	RES, CHIP 2.2 5% 1/10W
		RES, CHIP 2.7 5% 1/10W
1-216-302-00	S	
1-216-304-00	\$	RES, CHIP 3.3 5% 1/10W
1-216-306-00	S	RES, CHIP 3.9 5% 1/10W
1-216-308-00	s	RES, CHIP 4.7 5% 1/10W
1-216-309-00	s	RES, CHIP 5.6 5% 1/10W
1-216-311-00	S	RES, CHIP 6.8 5% 1/10W
1-216-313-00	S	
1-216-001-00	S	RES, CHIP 10 5% 1/10W
1-216-003-00	s	RES, CHIP 12 5% 1/10W
1-216-005-00	S	RES, CHIP 15 5% 1/10W
1-216-007-00	s	RES, CHIP 18 5% 1/10W
1-216-009-00		RES, CHIP 22 5% 1/10W
	S	
1-216-011-00	S	RES, CHIP 27 5% 1/10W
1-216-013-00	s	RES, CHIP 33 5% 1/10W
1-216-015-00	S	RES, CHIP 39 5% 1/10W
1-216-017-00	S	RES, CHIP 47 5% 1/10W
		RES, CHIP 56 5% 1/10W
1-216-019-00	S	
1-216-021-00	S	RES, CHIP 68 5% 1/10W
1-216-023-00	s	RES, CHIP 82 5% 1/10W
1-216-025-00	S	RES, CHIP 100 5% 1/10W
1-216-027-00	S	RES, CHIP 120 5% 1/10W
1-216-029-00	S	
1-216-031-00	S	RES, CHIP 180 5% 1/10W
1-216-033-00	s	RES, CHIP 220 5% 1/10W
1-216-035-00	s	RES, CHIP 270 5% 1/10W
1-216-037-00		RES, CHIP 330 5% 1/10W
	S	RES, CHIP 390 5% 1/10W
1-216-039-00	S	
1-216-041-00	S	RES, CHIP 470 5% 1/10W
1-216-043-00	s	RES, CHIP 560 5% 1/10W
1-216-045-00	S	RES, CHIP 680 5% 1/10W
1-216-047-00	S	RES, CHIP 820 5% 1/10W
1-216-049-00		RES, CHIP 1k 5% 1/10W
	S	
1-216-051-00	S	RES, CHIP 1.2k 5% 1/10W
1-216-053-00	s	RES, CHIP 1.5k 5% 1/10W
1-216-055-00	S	RES, CHIP 1.8k 5% 1/10W
1-216-057-00	. S	RES, CHIP 2.2k 5% 1/10W
1-216-059-00	S	RES, CHIP 2.7k 5% 1/10W
1-216-061-00		
1-210-001-00	S	RES, CHIP 3.3k 5% 1/10W
1-216-063-00	s	RES, CHIP 3.9k 5% 1/10W
1-216-065-00	S	RES, CHIP 4.7k 5% 1/10W
1-216-067-00		RES, CHIP 5.6k 5% 1/10W
1-216-069-00		RES, CHIP 6.8k 5% 1/10W
1-216-071-00	S	RES, CHIP 8.2k 5% 1/10W
1-216-073-00	s	RES, CHIP 10k 5% 1/10W
1-216-075-00		RES, CHIP 12k 5% 1/10W
1-216-077-00		RES, CHIP 15k 5% 1/10W
1-216-079-00		
1-216-081-00	S	RES, CHIP 22k 5% 1/10W
1-216-083-00	s	RES, CHIP 27k 5% 1/10W
1-216-085-00		RES, CHIP 33k 5% 1/10W
1-216-087-00		RES, CHIP 39k 5% 1/10W
1-216-089-00		RES, CHIP 47k 5% 1/10W
1-216-091-00	S	RES, CHIP 56k 5% 1/10W

RESISTOR, CHIP

Part No.	SP	Description
1-216-093-00 1-216-095-00 1-216-097-00 1-216-099-00 1-216-101-00	\$ \$ \$ \$ \$	RES, CHIP 68k 5% 1/10W RES, CHIP 82k 5% 1/10W RES, CHIP 100k 5% 1/10W RES, CHIP 120k 5% 1/10W RES, CHIP 150k 5% 1/10W
1-216-103-00 1-216-105-00 1-216-107-00 1-216-109-00 1-216-111-00	\$ \$ \$ \$	RES, CHIP 180k 5% 1/10W RES, CHIP 220k 5% 1/10W RES, CHIP 270k 5% 1/10W RES, CHIP 330k 5% 1/10W RES, CHIP 390k 5% 1/10W
1-216-113-00 1-216-115-00 1-216-117-00 1-216-119-00 1-216-121-00	s s s s	RES, CHIP 470k 5% 1/10W RES, CHIP 560k 5% 1/10W RES, CHIP 680k 5% 1/10W RES, CHIP 820k 5% 1/10W RES, CHIP 1.0M 5% 1/10W
1-216-123-00 1-216-125-00 1-216-127-00 1-216-129-00 1-216-131-00 1-216-133-00	\$ \$ \$ \$ \$	RES, CHIP 1.2M 5% 1/10W RES, CHIP 1.5M 5% 1/10W RES, CHIP 1.8M 5% 1/10W RES, CHIP 2.2M 5% 1/10W RES, CHIP 2.7M 5% 1/10W RES, CHIP 3.3M 5% 1/10W

RESISTOR, METAL

Part No.	SP	Description
1-214-509-00 1-214-510-00 1-214-511-00 1-214-512-00 1-214-513-00	\$ \$ \$ \$	RES, METAL 10 1% 1/8W RES, METAL 11 1% 1/8W RES, METAL 12 1% 1/8W RES, METAL 13 1% 1/8W RES, METAL 15 1% 1/8W
1-214-514-00 1-214-515-00 1-214-516-00 1-214-517-00 1-214-518-00	\$ \$ \$ \$	RES, METAL 16 1% 1/8W RES, METAL 18 1% 1/8W RES, METAL 20 1% 1/8W RES, METAL 22 1% 1/8W RES, METAL 24 1% 1/8W
1-214-519-00 1-214-520-00 1-214-521-00 1-214-522-00 1-214-523-00	s s s	RES, METAL 27 1% 1/8W RES, METAL 30 1% 1/8W RES, METAL 33 1% 1/8W RES, METAL 36 1% 1/8W RES, METAL 39 1% 1/8W
1-214-524-00 1-214-525-00 1-214-526-00 1-214-527-00 1-214-528-00	\$ \$ \$ \$ \$	RES, METAL 43 1% 1/8W RES, METAL 47 1% 1/8W RES, METAL 51 1% 1/8W RES, METAL 56 1% 1/8W RES, METAL 62 1% 1/8W
1-214-529-00 1-214-530-00 1-214-531-00 1-214-532-00 1-214-533-00	S S S	RES, METAL 68 1% 1/8W RES, METAL 75 1% 1/8W RES, METAL 82 1% 1/8W RES, METAL 91 1% 1/8W RES, METAL 100 1% 1/8W
1-214-534-00 1-214-535-00 1-214-536-00 1-214-537-00 1-214-538-00	S S S	RES, METAL 110 1% 1/8W RES, METAL 120 1% 1/8W RES, METAL 130 1% 1/8W RES, METAL 150 1% 1/8W RES, METAL 160 1% 1/8W
1-214-539-00 1-214-540-00 1-214-541-00 1-214-542-00 1-214-543-00	S S S	RES, METAL 180 1% 1/8W RES, METAL 200 1% 1/8W RES, METAL 220 1% 1/8W RES, METAL 240 1% 1/8W RES, METAL 270 1% 1/8W
1-214-544-00 1-214-545-00 1-214-546-00 1-214-547-00 1-214-548-00	\$ \$ \$ \$	RES, METAL 300 1% 1/8W RES, METAL 330 1% 1/8W RES, METAL 360 1% 1/8W RES, METAL 390 1% 1/8W RES, METAL 430 1% 1/8W
1-214-549-00 1-214-550-00 1-214-551-00 1-214-552-00 1-214-553-00	S S S S	RES, METAL 470 1% 1/8W RES, METAL 510 1% 1/8W RES, METAL 560 1% 1/8W RES, METAL 620 1% 1/8W RES, METAL 680 1% 1/8W
1-214-554-00 1-214-555-00 1-214-556-00 1-214-557-00 1-214-558-00	S S S S	RES, METAL 750 1% 1/8W RES, METAL 820 1% 1/8W RES, METAL 910 1% 1/8W RES, METAL 1.0k 1% 1/8W RES, METAL 1.1k 1% 1/8W
1-214-559-00 1-214-560-00 1-214-561-00 1-214-562-00 1-214-563-00	\$ \$ \$ \$	RES, METAL 1.2k 1% 1/8W RES, METAL 1.3k 1% 1/8W RES, METAL 1.5k 1% 1/8W RES, METAL 1.6k 1% 1/8W RES, METAL 1.8k 1% 1/8W

RESISTOR, METAL

Part No.	SP	Description	
1-214-564-00 1-214-565-00 1-214-566-00 1-214-567-00 1-214-568-00	S S S S	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	2.0k 1% 1/8W 2.2k 1% 1/8W 2.4k 1% 1/8W 2.7k 1% 1/8W 3.0k 1% 1/8W
1-214-569-00 1-214-570-00 1-214-571-00 1-214-572-00 1-214-573-00	S S S S	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	3.3k 1% 1/8W 3.6k 1% 1/8W 3.9k 1% 1/8W 4.3k 1% 1/8W 4.7k 1% 1/8W
1-214-574-00 1-214-575-00 1-214-576-00 1-214-577-00 1-214-578-00	\$ \$ \$ \$	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	5.1k 1% 1/8W 5.6k 1% 1/8W 6.2k 1% 1/8W 6.8k 1% 1/8W 7.5k 1% 1/8W
1-214-579-00 1-214-580-00 1-214-581-00 1-214-582-00 1-214-583-00	s s s s	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	8.2k 1% 1/8W 9.1k 1% 1/8W 10k 1% 1/8W 11k 1% 1/8W 12k 1% 1/8W
1-214-584-00 1-214-585-00 1-214-586-00 1-214-587-00 1-214-588-00	S S S	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	13k 1% 1/8W 15k 1% 1/8W 16k 1% 1/8W 18k 1% 1/8W 20k 1% 1/8W
1-214-589-00 1-214-590-00 1-214-591-00 1-214-592-00 1-214-593-00	\$ \$ \$ \$	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	22k 1% 1/8W 24k 1% 1/8W 27k 1% 1/8W 30k 1% 1/8W 33k 1% 1/8W
1-215-819-11 1-215-820-11 1-215-821-11 1-215-822-11 1-215-823-11	\$ \$ \$ \$	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	36k 1% 1/8W 39k 1% 1/8W 43k 1% 1/8W 47k 1% 1/8W 51k 1% 1/8W
1-215-824-11 1-215-825-11 1-215-826-11 1-215-827-11 1-215-828-11	\$ \$ \$ \$	RES, METAL RES, METAL RES, METAL RES, METAL RES, METAL	56k 1% 1/8W 62k 1% 1/8W 68k 1% 1/8W 75k 1% 1/8W 82k 1% 1/8W
1-215-829-11 1-215-830-11	s s	RES, METAL RES, METAL	91k 1% 1/8W 100k 1% 1/8W

AT-5	8 B(IAC	(D

(AT-58 BOARD)

Ref. No. or Q'ty Pa	art No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
5pcs 3- 4pcs 3-	7515-127-A -621-124-00 -669-595-00 -711-767-01	o s s	WASHER (2), STOPPER SCREW, STOPPER	IC11 IC12 IC13 IC14 IC15	8-741-117-90	S S S	IC MN1237AD IC BX1179 IC TC4069UBF IC HD63PB05Y0 IC MBM27C64
C3 1- C5 1- C8 1-	-163-038-00 -163-038-00 -163-038-00 -163-038-00 -163-038-00	S S S	CERAMIC CHIP 0.1MF 25V		8-741-117-90 8-759-234-77 8-759-209-69	S	IC TC4S66F IC TC4S11F
C11 1- C12 1- C13 1- C14 1-	-163-038-00 -163-038-00 -163-038-00 -163-117-00 -163-125-00	S S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 100PF 5% 50V CERAMIC CHIP 120PF 5% 50V	Q1 Q2 Q3 Q4 Q5	8-729-100-66 8-729-216-22 8-729-100-66 8-729-100-66 8-729-100-66	\$ \$ \$ \$	TRANSISTOR 2SC1623 TRANSISTOR 2SA1162 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623
	-125-446-11	s	DOUBLE LAYERS 0.47F 5.5V	Q6 Q7	8-729-216-22 8-729-100-66		TRANSISTOR 2SA1162 TRANSISTOR 2SC1623
C20 1- C22 1- C23 1- C25 1-	-163-101-00 -163-038-00 -163-101-00 -163-105-00	S S S	CERAMIC CHIP 22PF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 22PF 5% 50V CERAMIC CHIP 33PF 5% 50V CERAMIC CHIP 33PF 5% 50V	R39 R41 R52 R53 R54	1-216-686-11 1-216-691-11 1-216-626-11 1-216-682-11 1-216-693-11	S S	METAL CHIP 30K 0.5% 1/10W METAL CHIP 47K 0.5% 1/10W METAL CHIP 91 0.50% 1/10W METAL CHIP 20K 0.5% 1/10W METAL CHIP 56K 0.5% 1/10W
C27 1 C30 1 C35 1	-103-141-00	S S S	CERAMIC CHIP 0.00MF 3% 30V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 0.01MF 20% 100V	R73 R74 R75 R76	1-216-639-11 1-216-627-11 1-216-627-11	S S S	METAL CHIP 330 0.5% 1/10W METAL CHIP 100 0.5% 1/10W METAL CHIP 100 0.5% 1/10W METAL CHIP 100 0.5% 1/10W
C39 1 C40 1 C41 1	-163-038-00	S S S	CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	R78		S	METAL CHIP 56K 0.5% 1/10W METAL CHIP 1.5K 0.5% 1/10W NETWORK
C43 1	-163-038-00	s	CERAMIC CHIP 0.1MF 25V	RP2 RP3	1-235-813-11 1-231-387-00	S	NETWORK NETTY, RES
C45 1	-163-038-00 -163-038-00 -102-074-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC 0.001MF 10% 50V	RV1 RV2	1-237-035-11 1-237-034-11	S	METAL 5K METAL 2K
CN2 1	1-506-731-21 1-506-467-11 1-506-471-11	0	CONNECTOR, 40P MALE CONNECTOR, 2P, MALE CONNECTOR, 6P, MALE CONNECTOR, 3P, MALE CONNECTOR, 8P, MALE	S1 S2	1-570-602-11 1-570-374-12	S	SWITCH, DIP SLIDE
CN4 1	1-506-468-11	0	CONNECTOR, 3P, MALE CONNECTOR, 8P, MALE	X 1	1-567-192-11	S	CERAMIC 4.00MHz
	1-506-467-11 1-506-469-11		CONNECTOR, 2P, MALE CONNECTOR, 4P, MALE				
D2 8 D3 8 D4 8	8-719-400-18 8-719-104-34 8-719-400-18 8-719-800-76 8-719-104-34	s s	DIODE MA152WK DIODE 1S2836 DIODE MA152WK DIODE 1SS226 DIODE 1S2836			•	
IC2 1 IC3 1 IC4 1	1-807-412-12 1-807-413-11 1-807-414-11 8-759-200-82 8-759-906-54	S S	IC BH-1219A IC BH-1220 IC BH-1221 IC TC4069UBF IC TL064CNS				
IC7 IC8 IC9	8-759-208-07 8-759-101-12 8-759-918-65 8-759-204-79 8-759-906-53	S	IC TC4051BFHB IC UPC311G2 IC TL7700CPS IC TC40H241F IC TL062CPS				

BI-29 B	OARD		BI-30 BOARD			
Ref. No.		SP Description	Ref. No. or Q'ty	Part No.	SP	Description
C1 C2 C3 C4 C5	1-135-079-21 1-135-079-21 1-135-079-21 1-126-767-11 1-163-038-00	s TANTALUM CHIP 3.3MF 20% 35V s TANTALUM CHIP 3.3MF 20% 35V s TANTALUM CHIP 3.3MF 20% 35V s ELECT 1000uF 20% 16V s CERAMIC CHIP 0.1MF 25V	C1 C2 C3 C4 C5	1-135-079-21 1-135-079-21 1-135-079-21 1-126-767-11 1-163-038-00	\$ \$ \$ \$ \$	TANTALUM CHIP 3.3MF 20% 35V TANTALUM CHIP 3.3MF 20% 35V TANTALUM CHIP 3.3MF 20% 35V ELECT 1000uF 20% 16V CERAMIC CHIP 0.1MF 25V
C6 C7 C8 C9 C10	1-163-038-00 1-163-021-00 1-135-092-21 1-163-129-00 1-135-092-21	S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.01MF 10% 50V S TANTALUM CHIP 3.3MF 20% 16V S CERAMIC CHIP 330PF 5% 50V S TANTALUM CHIP 3.3MF 20% 16V	C6 C7 C8 C9 C10	1-163-038-00 1-163-021-00 1-135-092-21 1-163-129-00 1-135-092-21	S S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.01MF 10% 50V TANTALUM CHIP 3.3MF 20% 16V CERAMIC CHIP 330PF 5% 50V TANTALUM CHIP 3.3MF 20% 16V
C11 C12 C13	1-135-079-21 1-163-038-00 1-126-767-11	s TANTALUM CHIP 3.3MF 20% 35V s CERAMIC CHIP 0.1MF 25V s ELECT 1000uF 20% 16V	C11 C12 C13	1-135-079-21 1-163-038-00 1-126-767-11	S	TANTALUM CHIP 3.3MF 20% 35V CERAMIC CHIP 0.1MF 25V ELECT 1000uF 20% 16V
CN1	1-943-989-11 1-565-129-11 1-565-164-11 1-566-987-11 1-568-655-11	s HARNESS (BI HARNESS 70) o HOUSING, 10P o CONTACT, FEMALE AWG26-32 o CONTACT, MALE AWG28-32 o HOUSING, 10P	CN1	1-943-989-11 1-565-129-11 1-565-164-11 1-566-987-11 1-568-655-11	(HARNESS(BI HARNESS 70) HOUSING, 10P CONTACT, FEMALE AWG26-32 CONTACT, MALE AWG28-32 HOUSING, 10P
CN2	1-943-989-11 1-565-129-11 1-565-164-11 1-566-987-11 1-568-655-11	s HARNESS(BI HARNESS 70) o HOUSING, 10P o CONTACT, FEMALE AWG26-32 o CONTACT, MALE AWG28-32 o HOUSING, 10P	CN2	1-943-989-11 1-565-129-11 1-565-164-11 1-566-987-11 1-568-655-11	(HARNESS (BI HARNESS 70) HOUSING, 10P CONTACT, FEMALE AWG26-32 CONTACT, MALE AWG28-32 HOUSING, 10P
D1 D2 D3 D4 D5	8-719-800-76 8-719-105-99 8-719-100-03 8-719-100-03 8-719-800-76	s DIODE 1SS123 s DIODE RD6.2M-B1 s DIODE 1S2835 s DIODE 1S2835 s DIODE 1SS123	D1 D2 D3 D4 D5	8-719-800-76 8-719-105-99 8-719-100-03 8-719-100-03 8-719-800-76	S S S	DIODE 1SS123 DIODE RD6.2M-B1 DIODE 1S2835 DIODE 1S2835 DIODE 1SS123
Q1 Q2	8-729-421-71 8-729-116-64	s TRANSISTOR 2SK620 s TRANSISTOR 2SK508-K51	Q1 Q2	8-729-421-71 8-729-116-64	s s	TRANSISTOR 2SK620 TRANSISTOR 2SK508-K51
R13	1-216-688-11	s METAL CHIP 36K 0.50% 1/10W	R13	1-216-688-11	s	METAL CHIP 36K 0.50% 1/10W

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BI-31 BOARD
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Ref. No. or Q'ty	Part No.	SP	Description
C1 C2 C3 C4 C5	1-135-079-21 1-135-079-21 1-135-079-21 1-126-767-11 1-163-038-00	S S S	TANTALUM CHIP 3.3MF 20% 35V TANTALUM CHIP 3.3MF 20% 35V TANTALUM CHIP 3.3MF 20% 35V ELECT 1000uF 20% 16V CERAMIC CHIP 0.1MF 25V
C6 C7 C8 C9 C10	1-163-038-00 1-163-021-00 1-135-092-21 1-163-129-00 1-135-092-21	S	
C11 C12 C13	1-135-079-21 1-163-038-00 1-126-767-11	s s	TANTALUM CHIP 3.3MF 20% 35V CERAMIC CHIP 0.1MF 25V ELECT 1000uF 20% 16V
CN1	1-943-989-11 1-565-129-11 1-565-164-11 1-566-987-11 1-568-655-11	0	HARNESS (BI HARNESS 70) HOUSING, 10P CONTACT, FEMALE AWG26-32 CONTACT, MALE AWG28-32 HOUSING, 10P
CN2	1-943-989-11 1-565-129-11 1-565-164-11 1-566-987-11 1-568-655-11	0	HARNESS (BI HARNESS 70) HOUSING, 10P CONTACT, FEMALE AWG26-32 CONTACT, MALE AWG28-32 HOUSING, 10P
D1 D2 D3 D4 D5	8-719-800-76 8-719-105-99 8-719-100-03 8-719-100-03 8-719-800-76		DIODE RD6.2M-B1 DIODE 1S2835 DIODE 1S2835
Q1 Q2	8-729-421-71 8-729-116-64	s s	THE PARTY OF THE P
R13	1-216-688-11	s	METAL CHIP 36K 0.50% 1/10W

CN-304 BOARD

CN-304	DOARD		
Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7513-988-A	0	MOUNTED CIRCUIT BOARD, CN-304
C1 C2	1-135-166-21 1-135-166-21	s s	TANTALUM CHIP 47MF 20% 6.3V TANTALUM CHIP 47MF 20% 6.3V
CN1 CN2 CN3 CN4 CN5	1-562-773-11 1-565-157-11 1-565-157-11 1-565-157-11 1-565-157-11	0	CONNECTOR, 40P, FEMALE CONNECTOR, 10P, MALE CONNECTOR, 10P, MALE CONNECTOR, 10P, MALE CONNECTOR, 10P, MALE
CN6 CN7	1-565-157-11 1-565-157-11	0	CONNECTOR, 10P, MALE CONNECTOR, 10P, MALE
D1 D2 D3 D4 D5 D6 IC1 IC2	8-719-800-76 8-719-800-76 8-719-800-76 8-719-800-76 8-719-800-76 8-719-800-76 8-759-321-75	S S S S	DIODE 1SS123 DIODE 1SS123 DIODE 1SS123 DIODE 1SS123 DIODE 1SS123 DIODE 1SS123 DIODE 1SS123 IC HD74AC04P-R IC HD74AC04P-R
CN-440	BOARD		
Ref. No. or Q'ty		SP	Description
1pc	1-633-209-12	0	PRINTED CIRCUIT BOARD, CN-440
C1	1-135-160-21	s	TANTALUM CHIP 15uF 10% 16V
CN11 CN13 CN14	1-566-399-21 1-566-395-11 1-566-394-21	0	CONNECTOR, 18P, MALE CONNECTOR, 10P, MALE CONNECTOR, 8P, MALE

1-408-127-41 s INDUCTOR 68UH

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DR-86 BOARD						
Ref. No. or Q'ty	Part No.	SP	Description			
C3 C4 C5 C6 C8	1-163-017-00 1-164-232-11 1-163-017-00 1-164-232-11 1-124-556-11	S S S S	CERAMIC CHIP 0.0047MF 10% 50V CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 0.0047MF 10% 50V CERAMIC CHIP 0.01MF 20% 100V ELECT 2200uF 20% 16V			
C9 C10 C12 C21 C23	1-126-176-11 1-124-556-11 1-126-103-11 1-124-478-11 1-163-038-00	\$ \$ \$ \$	ELECT 220MF 20% 10V ELECT 2200uF 20% 16V ELECT 470uF 20% 16V ELECT 100MF 20% 25V CERAMIC CHIP 0.1MF 25V			
C24 C25 C27 C28 C29	1-163-227-11 1-163-125-00 1-163-141-00 1-126-233-11 1-126-233-11	S S S S	CERAMIC CHIP 10PF 5% 50V CERAMIC CHIP 220PF 5% 50V CERAMIC CHIP 0.001MF 5% 50V ELECT 22uF 20% 35V ELECT 22uF 20% 35V			
C30 C31 C32 C33 C34	1-124-122-11 1-135-136-21 1-135-092-21 1-135-159-21 1-163-038-00	\$ \$ \$ \$	ELECT 100MF 20% 50V TANTALUM CHIP 6.8uF 10% 35V TANTALUM CHIP 3.3MF 20% 16V TANTALUM CHIP 10MF 20% 16V CERAMIC CHIP 0.1MF 25V			
C37 C38 C39 C40 C41	1-135-076-21 1-135-076-21 1-135-076-21 1-135-092-21 1-163-117-00	\$ \$ \$ \$ \$	TANTALUM CHIP 1uF 10% 35V TANTALUM CHIP 1uF 10% 35V TANTALUM CHIP 1uF 10% 35V TANTALUM CHIP 3.3MF 20% 16V CERAMIC CHIP 100PF 5% 50V			
CN1 CN2 CN3	1-569-606-11 1-566-573-11 1-506-474-11	0 0 0	CONNECTOR, 40P, MALE CONNECTOR, 25P, FEMALE CONNECTOR, 9P, MALE			
D1 D3 D4 D5 D6	8-719-100-03 8-719-100-03 8-719-100-03 8-719-100-03 8-719-100-03	S S S S	DIODE 1S2835 DIODE 1S2835 DIODE 1S2835 DIODE 1S2835 DIODE 1S2835			
D7 D9 D10 D11 D12	8-719-800-76 8-719-100-03 8-719-105-99 8-719-100-03 8-719-100-03	S S S S	DIODE 1SS123 DIODE 1S2835 DIODE RD6.2M-B1 DIODE 1S2835 DIODE 1S2835			
D13 D14 D15	8-719-100-03 8-719-908-06 8-719-908-06	S S	DIODE 1S2835 DIODE ERA81-005 DIODE ERA81-005			
IC2 IC3 IC4 IC5 IC6	8-759-926-48 8-752-031-03 8-752-031-03 8-752-031-03 8-752-031-03	S S S S	IC SN74HC244NS IC CXA1065M IC CXA1065M IC CXA1065M IC CXA1065M			
IC7	8-759-234-20	s	IC TC7S08F-TE85L			
Q1 Q2 Q3 Q4 Q5	8-729-216-22 8-729-100-66 8-729-100-66 8-729-216-22 8-729-100-66	\$ \$ \$ \$	TRANSISTOR 2SA1162 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SA1162 TRANSISTOR 2SC1623			
Q6 Q7 Q8 Q9 Q10	8-729-216-22 8-729-143-44 8-729-119-59 8-729-143-44 8-729-119-59	S S S S	TRANSISTOR 2SA1162 TRANSISTOR 2SA1463IK TRANSISTOR 2SK612-Z TRANSISTOR 2SA1463IK TRANSISTOR 2SK612-Z			

(DR-86 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q12	8-729-100-66	\$	TRANSISTOR 2SC1623
Q14	8-729-112-65	\$	TRANSISTOR 2SA1462
Q15	8-729-112-65	\$	TRANSISTOR 2SA1462
Q19	8-729-122-63	\$	TRANSISTOR 2SA1226
Q20	8-729-421-71	\$	TRANSISTOR 2SK620
Q21	8-729-100-66	\$	TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623
Q22	8-729-100-66	\$	
Q23	8-729-100-66	\$	
Q24	8-729-100-66	\$	
Q25	8-729-100-66	\$	
Q27 R1 R58 R60 RV1	8-729-100-66 1-216-682-11 1-216-668-11 1-216-675-11 1-237-037-11	\$ \$ \$ \$	TRANSISTOR 2SC1623 METAL CHIP 20K 0.50% 1/10W METAL CHIP 5.1K 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W METAL 20K
RV2	1-237-037-11	S	METAL 20K
RV3	1-237-037-11		METAL 20K

EN-69P	BOARD			(EN-69F	BOARD)		
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
1pc 9pcs 1pc	A-7513-619-B 3-621-124-00 3-711-775-01	0	MOUNTED CIRCUIT BOARD, EN-69P SPACER LEVER, PULL	C100 C101 C102 C103	1-163-097-00 1-163-093-00 1-107-158-00 1-163-125-00	s s s	CERAMIC CHIP 15PF 5% 50V CERAMIC CHIP 10PF 5% 50V MICA 30PF 5% 500V CERAMIC CHIP 220PF 5% 50V
C3 C4 C6	1-163-038-00 1-163-038-00 1-163-038-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	C104 C105	1-163-117-00 1-163-038-00		CERAMIC CHIP 100PF 5% 50V CERAMIC CHIP 0.1MF 25V
C8 C9	1-163-038-00 1-107-042-00		CERAMIC CHIP 0.1MF 25V MICA 2.2PF 0.5PF 500V	CN1	1-506-730-11	0	CONNECTOR, 40P, MALE
C10	1-107-040-00		MICA 1.5PF 0.5PF 500V CERAMIC CHIP 0.1MF 25V	CV1	1-141-298-11	s	CERAMIC TRIMMER 10P
C13 C14 C16 C18	1-163-038-00 1-163-038-00 1-163-038-00 1-164-232-11	s s s	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.01MF 20% 100V	D2 D3 D4 D5	8-719-914-11 8-719-800-76 8-719-100-05 8-719-100-05	S S	DIODE HZ4ALL DIODE 1SS123 DIODE 1S2837 DIODE 1S2837
C19 C20	1-162-876-11 1-107-075-00	S	CERAMIC 75PF 5% 50V MICA 39PF 5% 50V	DL1	1-415-483-11	s	338+7nS
C21 C24 C26	1-164-232-11 1-163-038-00 1-107-043-00	S	CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 0.1MF 25V MICA 2.7PF 0.5PF 500V	FL1	1-235-181-00	s	BAND PASS 4.43MHz
C27 C28 C35 C36 C39	1-107-043-00 1-107-043-00 1-163-038-00 1-163-038-00 1-163-038-00	S S S	MICA 2.7PF 0.5PF 500V MICA 2.7PF 0.5PF 500V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	IC1 IC2 IC3 IC4 IC5	8-759-200-81 1-807-421-11 8-741-135-60 8-759-906-59 8-759-200-79	s s	IC TC4053BF IC BH-1216 IC BX1356 IC CX22017 IC TC4049BF
C40 C41 C42 C43 C44	1-163-038-00 1-107-042-00 1-163-038-00 1-163-038-00 1-163-038-00	s s s	CERAMIC CHIP 0.1MF 25V MICA 2.2PF 0.5PF 500V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	IC6 IC7 IC8 IC9 IC10	8-759-911-77 1-807-421-11 1-807-419-11 1-807-418-11 1-807-420-12	S S S	IC CX7968A IC BH-1216 IC BH-1214 IC BH-1213 IC BH-1215A
C45 C49 C50	1-163-038-00 1-163-038-00 1-163-038-00	s s	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	IC11 IC12 IC13	1-807-423-11 8-759-981-65 8-759-200-79	s s	IC BH-1218 IC LM2903M IC TC4049BF
C51 C52	1-162-752-11 1-162-871-11		CERAMIC 91PF 5% 50V CERAMIC 47PF 5% 50V	L1 L2 L3	1-408-417-21 1-408-417-21 1-408-417-21	S	47uH 47uH 47uH
C53 C54 C57	1-107-206-00 1-162-876-11 1-163-038-00	S	MICA 15PF 5% 500V CERAMIC 75PF 5% 50V CERAMIC CHIP 0.1MF 25V	L4 L6		` S	68uH 68uH
C59 C60	1-163-038-00 1-163-038-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	LV1 LV2	1-408-844-00 1-410-619-11		22uH . INDUCTOR, VAR 220uH
C65 C66 C69 C70 C74	1-163-038-00 1-163-038-00 1-162-710-11 1-162-720-11 1-124-286-00	S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC 100PF 5% 50V CERAMIC 270PF 5% 50V ELECT(NONPOLAR) 33 20% 16V	Q1 Q2 Q3 Q4 Q5	8-729-216-22 8-729-216-22 8-729-216-22 8-729-100-66 8-729-100-66	s s s	TRANSISTOR 2SA1162 TRANSISTOR 2SA1162 TRANSISTOR 2SA1162 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623
C75 C76 C78 C79 C82	1-163-038-00 1-163-038-00 1-162-710-11 1-162-720-11 1-124-286-00	s s	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC 100PF 5% 50V CERAMIC 270PF 5% 50V ELECT(NONPOLAR) 33 20% 16V	Q6 Q7 Q8 Q9 Q10	8-729-100-66 8-729-100-66 8-729-216-22 8-729-100-66 8-729-100-66	s s	TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SA1162 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623
C83 C84 C88 C90 C91	1-124-584-00 1-124-584-00 1-164-232-11 1-163-038-00 1-163-038-00	s s s	ELECT 100MF 20% 10V ELECT 100MF 20% 10V CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	Q11 Q12 Q13 Q14 Q15	8-729-100-66 8-729-100-66 8-729-100-66 8-729-100-66 8-729-216-22	s s s	TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SA1162
C92 C94 C95 C98 C99	1-163-038-00 1-124-292-00 1-163-105-00 1-107-042-00 1-163-109-00	S S S	CERAMIC CHIP 0.1MF 25V ELECT 33MF 20% 6.3V CERAMIC CHIP 33PF 5% 50V MICA 2.2PF 0.5PF 500V CERAMIC CHIP 47PF 5% 50V	Q16 Q17 Q18 Q19 Q20	8-729-100-66 8-729-100-66 8-729-100-66 8-729-100-66 8-729-216-22	S S	TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SC1623 TRANSISTOR 2SA1162

(EN-69P BOARD)

Ref. No. or Q'ty	Part No.	ςD	Description
or Qty	rait No.		Description
Q21	8-729-100-66	S	TRANSISTOR 2SC1623
Q25	8-729-122-63	S	TRANSISTOR 2SA1226
Q26	8-729-100-66	S	TRANSISTOR 2SC1623
Q27	8-729-175-73	S	TRANSISTOR 2SC2757 TRANSISTOR 2SC1623
Q28	8-729-100-66	s	1KANSIS TOR 25C1025
Q29	8-729-122-63	S	TRANSISTOR 2SA1226
Q30	8-729-216-22	S	TRANSISTOR 2SA1162
Q31	8-729-100-66	S	TRANSISTOR 2SC1623 TRANSISTOR 2SA1162
Q32 Q33	8-729-216-22 8-729-216-22	S S	TRANSISTOR 2SA1162
Qss	0-72)-210-22	3	
Q34	8-729-100-66	S	TRANSISTOR 2SC1623
Q35	8-729-100-66	S	TRANSISTOR 2SC1623
R46	1-216-642-11	s	METAL CHIP 430 0.50% 1/10W
R47	1-216-642-11	s	METAL CHIP 430 0.50% 1/10W
R109	1-216-654-11	s	METAL CHIP 1.3K 0.50% 1/10W
R131	1-216-699-11	S	METAL CHIP 100K 0.50% 1/10W
R133	1-216-664-11	S	METAL CHIP 3.6K 0.50% 1/10W
RP1	1-235-528-12	s	NETWORK
RP2	1-235-528-12	S	NETWORK
RP3	1-235-526-11	S	NETWORK
RP4	1-235-527-11	S	NETWORK
RP5	1-235-526-11	S	NETWORK
RP7	1-235-527-11	s	NETWORK
RV2	1-228-459-00	S	METAL 10K
RV4	1-228-456-00	S	METAL 1K
RV5	1-228-456-00	S	METAL 1K
RV6	1-228-457-00	S	METAL 2K
RV7	1-228-457-00	S	METAL 2K
RV8	1-228-457-00	s	METAL 2K
RV11	1-228-459-00	S	METAL 10K
RV12	1-228-456-00	S	METAL 1K
RV13	1-228-473-00	S	METAL 5K
RV14	1-228-457-00	S	METAL 2K
RV15	1-228-459-00	S	METAL 10K
RV17	1-228-454-00	S	METAL 200
RV18	1-228-454-00	S	METAL 200
RV19	1-228-473-00	S	METAL 1K
RV20	1-228-456-00	S	METAL 1K
RV21	1-228-473-00	s	METAL 5K
RV22	1-228-457-00	S	METAL 2K
RV23	1-228-457-00	S	METAL 2K
S1	1-570-857-11	s	SLIDE
S2	1-570-857-11	S	SLIDE
S3	1-570-857-11	S	SLIDE

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7520-253-A	0	MOUNTED CIRCUIT BOARD, EX-10
CN1 CN2	1-563-237-11 1-506-730-11	0	CONNECTOR, 40P, FEMALE CONNECTOR, 40P, MALE
			•

HN-135 BOARD					IE-25 BOARD			
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description	
1pc 2pcs 1pc	A-7513-995-A 1-563-088-11 1-939-724-11	0	MOUNTED CIRCUIT BOARD, HN-135 PLUG CONTACT, FEMALE, AWG24-30 HARNESS (AT 8P)	lpc lpc	A-7513-989-A 3-711-775-01	0	MOUNTED CIRCUIT BOARD, IE-25 LEVER, PULL	
CN1 CN1 CN2 CN2	3-710-037-03 1-562-147-11 1-563-239-21 1-562-153-11 1-562-735-11	S 0 0 0	STAY, MB PLUG HOUSING, 2P CONNECTOR, 40P FEMALE PLUG HOUSING, 8P PLUG HOUSING, 2P	C1 C4 C8 C9 C10	1-163-038-00 1-163-038-00 1-163-141-00 1-163-141-00 1-107-047-00	\$ \$ \$	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.001MF 5% 50V CERAMIC CHIP 0.001MF 5% 50V MICA 5.6PF 0.5PF 500V	
CN2 CN3 CN4 CN5 CN6	1-563-239-11 1-563-239-11 1-563-239-11 1-563-239-11	0 0	CONNECTOR, 40P, MALE	C11 C13 C14 C15 C16	1-163-038-00 1-163-038-00 1-163-038-00 1-163-038-00 1-107-159-00	S S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V MICA 33PF 5% 500V	
CN7 CN8 CN9 CN10 CN11	1-563-239-21 1-506-635-11 1-506-476-11 1-506-482-11 1-506-483-21	0	CONNECTOR, 40P FEMALE CONNECTOR, 12P MALE CONNECTOR, 11P, MALE CONNECTOR, 3P, MALE CONNECTOR, 4P, MALE	C19 C20 C23 C24 C25	1-107-159-00 1-107-026-00 1-163-038-00 1-163-038-00 1-163-038-00	\$ \$ \$ \$	MICA 33PF 5% 500V MICA 5.1PF 500V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	
CN12 CN13 CN14 CN15 CN16	1-506-470-11 1-506-489-11 1-506-469-11 1-506-477-11 1-506-484-31	0	CONNECTOR, 5P, MALE CONNECTOR, 10P, MALE CONNECTOR, 4P, MALE CONNECTOR, 12P, MALE CONNECTOR, 5P, MALE	C26 C28 C29 C30 C31	1-163-093-00 1-163-038-00 1-163-038-00 1-163-038-00 1-107-159-00	s s	CERAMIC CHIP 10PF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V MICA 33PF 5% 500V	
CN17 CN18 CN20 CN21	1-506-470-11 1-506-467-11 1-506-639-11 1-506-492-11	0 0 0	CONNECTOR, 5P, MALE CONNECTOR, 2P, MALE CONNECTOR, 20P MALE CONNECTOR, 13P, MALE	C34 C36 C37 C40 C41	1-107-159-00 1-163-038-00 1-107-208-00 1-163-038-00 1-163-038-00	s s s	MICA 33PF 5% 500V CERAMIC CHIP 0.1MF 25V MICA 18PF 5% 500V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	
CN22 CN23 CN24 CN25 CN26 CN27	1-506-485-11 1-506-483-21 1-506-468-11 1-506-470-11 1-506-638-11	0 0 0	CONNECTOR, 6P, MALE CONNECTOR, 4P, MALE CONNECTOR, 3P, MALE CONNECTOR, 5P, MALE CONNECTOR, 2P, MALE CONNECTOR, 18P MALE	C42 C43 C44 C45 C46	1-161-896-11 1-161-896-11 1-124-270-11 1-124-270-11 1-161-896-11	S S	CERAMIC 0.22MF 50V CERAMIC 0.22MF 50V ELECT, NONPOLAR 0.47uF 20% 50V ELECT, NONPOLAR 0.47uF 20% 50V CERAMIC 0.22MF 50V	
D1 D2 D3 D4	8-719-911-19 8-719-911-19 8-719-911-19 8-719-911-19	s s s	DIODE 1SS119	C47 C48 C54 C56 C60	1-124-270-11 1-124-270-11 1-163-038-00 1-163-038-00 1-163-038-00	' S S S	ELECT, NONPOLAR 0.47uF 20% 50V ELECT, NONPOLAR 0.47uF 20% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	
IC1	8-759-403-48	S	IC AN6701S	C62 C63 C68 C69 C72	1-163-038-00 1-163-038-00 1-163-038-00 1-163-038-00 1-163-116-00	S S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 91PF 5% 50V	
				C76 C79 C84 C85 C86	1-161-896-11 1-107-075-00 1-130-471-00 1-130-471-00 1-130-471-00	S S S	CERAMIC 0.22MF 50V MICA 39PF 5% 50V MYLAR 0.001uF 5% 50V MYLAR 0.001uF 5% 50V MYLAR 0.001uF 5% 50V	
			,	C87 C88 C90 C91 C93	1-130-471-00 1-163-038-00 1-163-038-00 1-163-038-00 1-163-038-00	S S	MYLAR 0.001uF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	
				C99 C100 C107 C109 C111	1-124-584-00 1-163-038-00 1-163-038-00 1-163-038-00 1-163-038-00	s s	ELECT 100MF 20% 10V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	
				C113	1-163-038-00	s	CERAMIC CHIP 0.1MF 25V	

(IE-25 B	OARD)			(IE-25 B	OARD)		
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
C116 C118 C119 C121 C127	1-163-038-00 1-163-038-00 1-163-038-00 1-164-232-11 1-163-101-00	\$ \$ \$ \$ \$	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 22PF 5% 50V	Q1 Q2 Q3 Q4 Q5	8-729-122-63 8-729-122-63 8-729-122-63 8-729-175-73 8-729-175-73		TRANSISTOR 2SA1226 TRANSISTOR 2SA1226 TRANSISTOR 2SA1226 TRANSISTOR 2SC2757 TRANSISTOR 2SC2757
C129 C130 C131 C133 C138	1-124-286-00 1-163-038-00 1-163-038-00 1-163-038-00 1-163-095-00	\$ \$ \$ \$ \$	ELECT(NONPOLAR) 33 20% 16V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 12PF 5% 50V	Q6 Q7 Q8 Q9 Q10	8-729-109-44 8-729-175-73 8-729-175-73 8-729-175-73 8-729-175-73	S S	TRANSISTOR 2SK94 TRANSISTOR 2SC2757 TRANSISTOR 2SC2757 TRANSISTOR 2SC2757 TRANSISTOR 2SC2757
C140 C141 C142 C143 C144	1-163-105-00 1-163-097-00 1-163-088-00 1-135-168-21 1-163-141-00	S S S S	CERAMIC CHIP 33PF 5% 50V CERAMIC CHIP 15PF 5% 50V CERAMIC CHIP 5PF 0.25PF 50V TANTAL CHIP 100MF 10% 4V CERAMIC CHIP 0.001MF 5% 50V	Q11 Q12 Q13 Q14 Q15	8-729-175-73 8-729-100-66 8-729-175-73 8-729-122-63 8-729-175-73	S S S	TRANSISTOR 2SC2757 TRANSISTOR 2SC1623 TRANSISTOR 2SC2757 TRANSISTOR 2SA1226 TRANSISTOR 2SC2757
C145	1-163-086-00	s	CERAMIC CHIP 3PF 0,25PF 50V	Q16 Q17	8-729-175-73 8-729-175-73	S S	TRANSISTOR 2SC2757 TRANSISTOR 2SC2757
CN1	1-506-730-11	0	, ,	Q18 Q19	8-729-109-44 8-729-175-73	S	TRANSISTOR 2SK94 TRANSISTOR 2SC2757
CV1 CV2 CV3	1-141-370-11 1-141-369-22 1-141-311-11	S S	CAP, CHIP TRIMMER 50PF CAP, CHIP TRIMMER 40PF TRIMMER 20PF CAP, CHIP TRIM ATTR 50PF	Q20 Q21	8-729-175-73 8-729-175-73 8-729-175-73		TRANSISTOR 2SC2757 TRANSISTOR 2SC2757 TRANSISTOR 2SC2757
CV4 D1 D2	1-141-370-11 8-719-800-76 8-719-100-03		CAP, CHIP TRIMMER 50PF DIODE 1SS123 DIODE 1S2835	Q22 Q23 Q24 Q25	8-729-175-73 8-729-122-63 8-729-109-44	S S S	TRANSISTOR 2SC2757 TRANSISTOR 2SC2757 TRANSISTOR 2SA1226 TRANSISTOR 2SK94
D3 D4 D5	8-719-100-03 8-719-101-97 8-719-101-97	s s s	DIODE 1S2835 DIODE 1SS97-1 DIODE 1SS97-1	Q26 Q27 Q28	8-729-109-44 8-729-122-63 8-729-122-63	S S	TRANSISTOR 2SK94 TRANSISTOR 2SA1226 TRANSISTOR 2SA1226
D6 D7 D8 D9	8-719-815-59 8-719-100-03 8-719-911-19 8-719-948-47	S	DIODE 1SS119	Q29 Q30 Q31	8-729-109-44 8-729-109-44 8-729-122-63	S	TRANSISTOR 2SK94 TRANSISTOR 2SK94 TRANSISTOR 2SA1226
D10	8-719-800-76	S		Q32 Q33	8-729-122-63 8-729-122-63	S S	TRANSISTOR 2SA1226 TRANSISTOR 2SA1226
D11 D12 D13	8-719-101-97 8-719-101-97 8-719-800-76		DIODE 1SS97-1 DIODE 1SS97-1 DIODE 1SS123	Q34 Q35	8-729-122-63 8-729-122-63		TRANSISTOR 2SA1226 TRANSISTOR 2SA1226
DL1 DL2 DL3 DL4	1-415-627-14 1-415-689-11 1-415-408-11 1-415-502-11	S S	DELAY LINE 63.532uS/63.552uS DELAY LINE 120nS 50nS, 100nS 100nS	Q36 Q37 Q38 Q39 Q41	8-729-122-63 8-729-100-66 8-729-109-44 8-729-109-44 8-729-175-73	\$ \$ \$	TRANSISTOR 2SA 1226 TRANSISTOR 2SC1623 TRANSISTOR 2SK94 TRANSISTOR 2SK94 TRANSISTOR 2SC2757
FL1	1-236-520-11	S	FILTER, LOW PASS	Q42	8-729-175-73	s	TRANSISTOR 2SC2757 TRANSISTOR 2SC2757
IC1 IC2 IC3 IC4	8-759-208-06 1-807-416-11 1-807-416-11 8-759-906-53	s s s	IC TC4051BPHB IC BH-1211 IC BH-1211 IC TL062CPS	Q43 Q44 Q45 Q46	8-729-175-73 8-729-109-44 8-729-109-44 8-729-175-73	S S	TRANSISTOR 2SK94 TRANSISTOR 2SK94 TRANSISTOR 2SC2757
IC5 IC6 IC7 IC8	1-807-422-11 8-759-906-53 8-759-208-06 8-759-200-90	s	IC BH-1217 IC TL062CPS IC TC4051BPHB IC TC4538BF	Q47 Q48 Q49 Q50 Q51	8-729-100-66 8-729-122-63 8-729-100-66 8-729-216-22	S S	TRANSISTOR 2SC1623 TRANSISTOR 2SA1226 TRANSISTOR 2SA1226 TRANSISTOR 2SC1623 TRANSISTOR 2SA1162
IC9 IC10	8-759-200-90 8-759-200-68	S S	IC TC4538BF IC TC4011BF	Q52 Q53	8-729-122-63 8-729-175-73	s s	TRANSISTOR 2SA 1226 TRANSISTOR 2SC2757
IC11	8-759-234-77	S	IC TC4S66F	Q54 Q55	8-729-175-73 8-729-175-73	S S	TRANSISTOR 2SC2757 TRANSISTOR 2SC2757
L1 L4	1-408-417-21 1-408-421-00	S	47uH 100uH	Q56	8-729-122-63	S	TRANSISTOR 2SA 1226
L5 L6 L7	1-410-510-11 1-408-170-00 1-408-421-00		INDUCTOR 12uH INDUCTOR 18uH 100uH	Q57 Q63 Q65 Q66	8-729-122-63 8-729-216-22 8-729-122-63 8-729-100-66	S	TRANSISTOR 2SA 1226 TRANSISTOR 2SA 1162 TRANSISTOR 2SA 1226 TRANSISTOR 2SC 1623

(IE-25 BOARD)		(IE-25 BOARD)
Ref. No. or Q'ty Part No.	SP Description	Ref. No. or Q'ty Part No. SP Description
Q67 8-729-100-66 Q68 8-729-175-73 Q69 8-729-175-73 Q70 8-729-100-66 Q71 8-729-175-73	s TRANSISTOR 2SC1623 s TRANSISTOR 2SC2757 s TRANSISTOR 2SC2757 s TRANSISTOR 2SC1623 s TRANSISTOR 2SC2757	R188 1-216-657-11 s METAL CHIP 1.8K 0.5% 1/10W R191 1-216-657-11 s METAL CHIP 1.8K 0.5% 1/10W R195 1-216-658-11 s METAL CHIP 2K 0.50% 1/10W R197 1-216-639-11 s METAL CHIP 330 0.50% 1/10W R198 1-216-639-11 s METAL CHIP 330 0.50% 1/10W
Q72 8-729-122-62 Q75 8-729-100-66 Q76 8-729-122-62 Q77 8-729-175-72 Q79 8-729-100-66	s TRANSISTOR 2SA1226 s TRANSISTOR 2SC1623 s TRANSISTOR 2SA1226 s TRANSISTOR 2SC2757 s TRANSISTOR 2SC1623	R199 1-216-689-11 s METAL CHIP 39K 0.50% 1/10W R202 1-216-655-11 s METAL CHIP 1.5K 0.50% 1/10W R203 1-216-633-11 s METAL CHIP 180 0.50% 1/10W R253 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W R255 1-216-042-00 s METAL CHIP 510 5% 1/10W
Q81 8-729-216-22 Q82 8-729-100-66 Q83 8-729-100-66 Q84 8-729-175-73 Q85 8-729-175-73	s TRANSISTOR 2SA1162 s TRANSISTOR 2SC1623 s TRANSISTOR 2SC1623 s TRANSISTOR 2SC2757 s TRANSISTOR 2SC2757	R262 1-216-645-11 s METAL CHIP 560 0.50% 1/10W R263 1-216-636-11 s METAL CHIP 240 0.5% 1/10W RV1 1-228-457-00 s METAL 2K RV2 1-228-455-00 s METAL 500 RV3 1-228-458-00 s METAL 5K
Q89 8-729-100-66 Q90 8-729-100-66 Q91 8-729-122-63	s TRANSISTOR 2SC1623 s TRANSISTOR 2SC1623 s TRANSISTOR 2SA1226	RV4 1-228-471-00 s METAL 1K RV5 1-228-474-00 s METAL 10K RV6 1-228-458-00 s METAL 5K
R7 1-216-627-11 R8 1-216-669-11 R10 1-216-647-11 R13 1-216-641-11 R14 1-216-663-11	s METAL CHIP 100 0.50% 1/10W s METAL CHIP 5.6K 0.50% 1/10W s METAL CHIP 680 0.50% 1/10W s METAL CHIP 390 0.50% 1/10W s METAL CHIP 3.3K 0.50% 1/10W	RV7 1-228-472-00 s METAL 2K RV8 1-228-470-00 s METAL 500 RV9 1-228-458-00 s METAL 5K RV10 1-228-458-00 s METAL 5K
R28 1-216-631-11 R29 1-216-651-11 R32 1-216-634-11 R33 1-216-658-11 R34 1-216-651-11	s METAL CHIP 150 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W s METAL CHIP 200 0.50% 1/10W s METAL CHIP 2K 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W	RV11 1-228-455-00 s METAL 500 RV12 1-228-458-00 s METAL 5K RV14 1-237-038-11 s METAL 50K RV15 1-228-455-00 s METAL 500 RV16 1-228-454-00 s METAL 200
R45 1-216-639-11 R59 1-216-651-11 R60 1-216-631-11 R63 1-216-651-11 R79 1-216-658-11	s METAL CHIP 330 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W s METAL CHIP 150 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W s METAL CHIP 2K 0.50% 1/10W	RV17 1-237-033-11 s METAL 1K S1 1-570-610-11 s TOGGLE S2 1-570-857-11 s SLIDE
R80 1-216-651-11 R81 1-216-658-11 R82 1-216-651-11 R88 1-216-644-11 R89 1-216-651-11	s METAL CHIP 1K 0.50% 1/10W s METAL CHIP 2K 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W s METAL CHIP 510 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W	LP-54 BOARD Ref. No. or Q'ty Part No. SP Description
R91 1-216-644-11 R93 1-216-651-11 R94 1-216-658-11 R108 1-216-675-11 R109 1-216-659-11	s METAL CHIP 510 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W s METAL CHIP 2K 0.50% 1/10W s METAL CHIP 10K 0.50% 1/10W s METAL CHIP 2.2K 0.50% 1/10W	1pc 1-633-206-11 o PRINTED CIRCUIT BOARD, LP-54 D1 8-719-812-43 s DIODE TLG124A D2 8-719-812-43 s DIODE TLG124A
R110 1-216-659-11 R127 1-216-667-11 R128 1-216-667-11 R129 1-216-651-11	s METAL CHIP 2.2K 0.50% 1/10W s METAL CHIP 4.7K 0.50% 1/10W s METAL CHIP 4.7K 0.50% 1/10W s METAL CHIP 1K 0.50% 1/10W	D3 8-719-812-43 s DIODE TLG124A D4 8-719-812-43 s DIODE TLG124A D5 8-719-812-41 s DIODE TLR124 D6 8-719-812-44 s DIODE TLO124
R147 1-216-675-11 R148 1-216-675-11 R161 1-216-682-11 R162 1-216-689-11 R163 1-216-679-11 R164 1-216-681-11	s METAL CHIP 10K 0.50% 1/10W s METAL CHIP 10K 0.50% 1/10W s METAL CHIP 20K 0.50% 1/10W s METAL CHIP 39K 0.50% 1/10W s METAL CHIP 15K 0.50% 1/10W s METAL CHIP 15K 0.50% 1/10W	D7 8-719-812-43 s DIODE TLG124A
R179 1-216-644-1; R184 1-216-644-1; R185 1-216-644-1; R186 1-216-644-1; R187 1-216-664-1;	s METAL CHIP 108.0.50% 1/10W s METAL CHIP 510 0.50% 1/10W s METAL CHIP 3.6K 0.50% 1/10W	

LP-55 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-633-207-11	o	PRINTED CIRCUIT BOARD, LP-55
D8 D9 D10 D11	8-719-915-45 8-719-915-45 8-719-909-20 8-719-909-20	S	DIODE SLP162B,RED DIODE SLP162B,RED DIODE GL-9NG2,GREEN DIODE GL-9NG2,GREEN

LP-56 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	3-722-474-05	0	BRACKET, LP
CN1	1-565-149-11	0	PIN, CONNECTOR (ANGLE) 2P
D1 D2	8-719-950-44 8-719-950-44	S S	DIODE GL-5LR40,RED DIODE GL-5LR40,RED

PA-91 BOARD

Ser. No.	40386- 41001-41262		BVP-70P BVP-70ISP
Ref. No. or Q'ty	Part No.	SP	Description
1pc	3-734-514-01	0	SUPPORT (Y)
C2 C3 C4 C5 C7	1-163-038-00 1-163-105-00 1-163-093-00 1-163-038-00 1-163-099-00	\$ \$ \$ \$ \$	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 33PF 5% 50V CERAMIC CHIP 10PF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 18PF 5% 50V
C12 C13 C14 C15 C16	1-163-038-00 1-163-105-00 1-163-093-00 1-163-038-00 1-163-099-00	\$ \$ \$ \$ \$	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 33PF 5% 50V CERAMIC CHIP 10PF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 18PF 5% 50V
C20 C21 C22 C24 C27	1-163-105-00 1-163-093-00 1-163-038-00 1-163-099-00 1-163-038-00	\$ \$ \$ \$ \$	CERAMIC CHIP 33PF 5% 50V CERAMIC CHIP 10PF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 18PF 5% 50V CERAMIC CHIP 0.1MF 25V
C30 C34 C36 C38 C39	1-163-038-00 1-163-038-00 1-163-038-00 1-124-455-00 1-124-455-00	S S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V ELECT 100uF 20% 16V ELECT 100uF 20% 16V
C40 C41 C42 C43 C46	1-124-455-00 1-124-455-00 1-124-455-00 1-124-455-00 1-163-038-00	\$ \$ \$ \$	ELECT 100uF 20% 16V ELECT 100uF 20% 16V ELECT 100uF 20% 16V ELECT 100uF 20% 16V CERAMIC CHIP 0.1MF 25V
CN1 CN2 CN3 CN4 CN5	1-506-485-11 1-506-759-11 1-506-467-11 1-506-467-11 1-506-467-11	0 0 0 0	CONNECTOR, 6P, MALE CONNECTOR, 15P, MALE CONNECTOR, 2P, MALE CONNECTOR, 2P, MALE CONNECTOR, 2P, MALE
CV1 CV2 CV3	1-141-356-11 1-141-356-11 1-141-356-11	s s s	CAP, CHIP TRIMMER 6PF CAP, CHIP TRIMMER 6PF CAP, CHIP TRIMMER 6PF
Q1 Q2 Q3 Q4 Q5	8-729-122-63 8-769-401-67 8-729-100-66 8-729-122-63 8-769-401-67	\$ \$ \$ \$ \$	TRANSISTOR 2SA 1226 TRANSISTOR 3SK 163-1 TRANSISTOR 2SC 1623 TRANSISTOR 2SA 1226 TRANSISTOR 3SK 163-1
Q6 Q7 Q8 Q9 Q10	8-729-100-66 8-729-122-63 8-769-401-67 8-729-100-66 8-729-175-73	\$ \$ \$ \$	TRANSISTOR 2SC1623 TRANSISTOR 2SA 1226 TRANSISTOR 3SK 163-1 TRANSISTOR 2SC1623 TRANSISTOR 2SC2757
Q11 Q12 Q13 Q15 Q16	8-729-100-66 8-729-175-73 8-729-100-66 8-729-175-73 8-729-216-22	\$ \$ \$ \$	TRANSISTOR 2SC1623 TRANSISTOR 2SC2757 TRANSISTOR 2SC1623 TRANSISTOR 2SC2757 TRANSISTOR 2SA1162
Q17 Q18 Q19 Q20 Q21	8-729-216-22 8-729-122-63 8-769-401-67 8-729-100-66 8-729-122-63	S S S S	TRANSISTOR 2SA 1162 TRANSISTOR 2SA 1226 TRANSISTOR 3SK 163-1 TRANSISTOR 2SC 1623 TRANSISTOR 2SA 1226

(PA-91 BOARD)

Ser. No.	40386- 41001-41262	· ;	BVP-70P BVP-70ISP
Ref. No. or Q'ty	Part No.	SP	Description
Q22	8-769-401-67	s	TRANSISTOR 3SK163-1
Q23	8-729-100-66	S	TRANSISTOR 2SC1623
Q24	8-729-122-63	S	TRANSISTOR 2SA1226
Q25 Q26	8-769-401-67 8-729-100-66	S S	TRANSISTOR 3SK163-1 TRANSISTOR 2SC1623
027	8-729-175-73	s	TRANSISTOR 2SC2757
O28	8-729-100-66	5	TRANSISTOR 2SC1623
Q29	8-729-175-73	8	TRANSISTOR 2SC2757
Q30	8-729-100-66	\$	TRANSISTOR 2SC1623
Q32	8-729-175-73	S	TRANSISTOR 2SC2757
Q33	8-729-216-22 8-729-122-63	S	TRANSISTOR 2SA1162 TRANSISTOR 2SA1226
Q34 Q35	8-769-401-67	S	TRANSISTOR 3SK163-1
Q36	8-729-100-66	S	TRANSISTOR 2SC1623
Q37	8-729-122-63	S	TRANSISTOR 2SA1226
Q38	8-769-401-67	s	TRANSISTOR 3SK163-1
Q39	8-729-100-66	S	TRANSISTOR 2SC1623
Q40	8-729-122-63	S	TRANSISTOR 2SA1226 TRANSISTOR 3SK163-1
Q41 Q42	8-769-401-67 8-729-100-66	S S	TRANSISTOR 2SC1623
Q43	8-729-175-73	s	TRANSISTOR 2SC2757
Q44	8-729-100-66	S	TRANSISTOR 2SC1623
Q45	8-729-175-73	S	TRANSISTOR 2SC2757
Q46 Q48	8-729-100-66 8-729-216-22	S S	TRANSISTOR 2SC1623 TRANSISTOR 2SA1162
Q49	8-729-216-22	s	TRANSISTOR 2SA1162
Õ50	8-729-216-22	S	TRANSISTOR 2SA1162
Q51	8-729-175-73	S	TRANSISTOR 2SC2757
Q52	8-729-216-22	S	TRANSISTOR 2SA1162 TRANSISTOR 2SA1162
Q53	8-729-216-22	S	
Q54 Q55	8-729-216-22 8-729-216-22	S S	TRANSISTOR 2SA1162 TRANSISTOR 2SA1162
-			METAL CHIP 470 0.50% 1/10W
R1 R20	1-216-643-11 1-216-639-11	S	METAL CHIP 470 0.30% 1/10W METAL CHIP 330 0.50% 1/10W
R21	1-216-649-11	S	METAL CHIP 820 0.50% 1/10W
R22	1-216-636-11	S	METAL CHIP 240 0.5% 1/10W
R23	1-216-636-11	S	METAL CHIP 240 0.5% 1/10W
R24	1-216-667-11	S	METAL CHIP 4.7K 0.50% 1/10W
R30 R31	1-216-603-11 1-216-656-11	S S	METAL CHIP 10 0.5% 1/10W METAL CHIP 1.6K 0.5% 1/10W
R35	1-216-643-11	S	METAL CHIP 470 0.50% 1/10W
R52	1-216-631-11	s	METAL CHIP 150 0.50% 1/10W
R54	1-216-639-11	S	
R55	1-216-649-11	S	METAL CHIP 820 0.50% 1/10W
R56 R57	1-216-633-11 1-216-633-11	S	METAL CHIP 180 0.50% 1/10W METAL CHIP 180 0.50% 1/10W
R58	1-216-667-11	S S	METAL CHIP 4.7K 0.50% 1/10W
R64	1-216-603-11	s	
R65	1-216-657-11	S	METAL CHIP 1.8K 0.5% 1/10W
R66	1-216-643-11	S	S FROM A CITY OF A CONTROL AND
R85 R87	1-216-631-11 1-216-639-11	s s	
1/0/	1-210-037-11	3	MILLIAN CITT 330 0.30 /0 1/10 ft

(PA-91 BOARD)

Ser. No.	40386- 41001-41262		BVP-70P BVP-70ISP	,
Ref. No. or Q'ty	Part No.	SP	Description	
R88 R89 R90 R91 R100	1-216-649-11 1-216-634-11 1-216-634-11 1-216-667-11 1-216-603-11	\$ \$ \$ \$ \$	METAL CH METAL CH METAL CH	IP 820 0.50% 1/10W IP 200 0.50% 1/10W IP 200 0.50% 1/10W IP 4.7K 0.50% 1/10W IP 10 0.5% 1/10W
R101 R108 R109	1-216-659-11 1-216-698-11 1-216-678-11	s s s	METAL CH	IP 2.2K 0.50% 1/10W IP 91K 0.50% 1/10W IP 13K 0.50% 1/10W
RV1 RV2 RV3	1-237-032-11 1-237-032-11 1-237-032-11	S S	METAL 500 METAL 500 METAL 500	1

PA-126 BOARD (For BVP-70ISP)

(PA-126 BOARD (For BVP-70ISP))

Ser. No	. 41263-		BVP-70ISP	Ser. No	. 41263-	BVP-70ISP
Ref. No			· ·	Ref. No.		
or Q'ty	Part No.	SP	Description	or Q'ty	Part No.	SP Description
lpc	3-734-514-01	0	SUPPORT (Y)	Q11 Q12	8-729-100-66 8-729-175-73	s TRANSISTOR 2SC1623-L6 s TRANSISTOR 2SC2757-T34
C2	1-163-038-00	s	CERAMIC CHIP 0.1MF 25V	Q13	8-729-100-66	s TRANSISTOR 2SC1623-L6
C3	1-163-105-00		CERAMIC CHIP 33PF 5% 50V	Q15	8-729-175-73 8-729-122-63	s TRANSISTOR 2SC2757-T34 s TRANSISTOR 2SA1226-E4
C4 C5	1-163-103-00 1-163-021-00		CERAMIC CHIP 27PF 5% 50V CERAMIC CHIP 0.01MF 10% 50V	Q16	0-129-122-03	\$ TRANSISTOR 25A1220-24
C7	1-163-105-00		CERAMIC CHIP 33PF 5% 50V	Q17	8-729-122-63	s TRANSISTOR 2SA1226-E4
	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			Q18	8-729-122-63	s TRANSISTOR 2SA1226-E4
C12 C13	1-163-038-00 1-163-105-00		CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 33PF 5% 50V	Q19 Q20	8-765-930-08 8-729-802-80	s TRANSISTOR 3SK163-2 s TRANSISTOR 2SC3661
C13	1-163-103-00		CERAMIC CHIP 33FF 5% 50V	Q20 Q21	8-729-122-63	s TRANSISTOR 2SA1226-E4
C15	1-163-021-00		CERAMIC CHIP 0.01MF 10% 50V		0,2, 1,2, 0	
C16	1-163-105-00	S	CERAMIC CHIP 33PF 5% 50V	Q22	8-765-930-08	s TRANSISTOR 3SK163-2
dan	1 162 105 00		OFF AND CHIP 22DE 50 50V	Q23	8-729-802-80	s TRANSISTOR 2SC3661 s TRANSISTOR 2SA1226-E4
C20 C21	1-163-105-00 1-163-103-00		CERAMIC CHIP 33PF 5% 50V CERAMIC CHIP 27PF 5% 50V	Q24 Q25	8-729-122-63 8-765-930-08	s TRANSISTOR 2SA1220-D4 s TRANSISTOR 3SK163-2
C22	1-163-021-00		CERAMIC CHIP 0.01MF 10% 50V	Q26	8-729-802-80	s TRANSISTOR 2SC3661
C24	1-163-105-00		CERAMIC CHIP 33PF 5% 50V	•		
C27	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	Q27	8-729-175-73	s TRANSISTOR 2SC2757-T34 s TRANSISTOR 2SC1623-L6
C30	1-163-038-00	r	CERAMIC CHIP 0.1MF 25V	Q28 Q29	8-729-100-66 8-729-175-73	s TRANSISTOR 2SC1623-L6 s TRANSISTOR 2SC2757-T34
C34	1-163-038-00		CERAMIC CHIP 0.1MF 25V	O30	8-729-100-66	s TRANSISTOR 2SC1623-L6
C36	1-163-038-00	s	CERAMIC CHIP 0.1MF 25V	Q32	8-729-175-73	s TRANSISTOR 2SC2757-T34
C38	1-124-455-00		ELECT 100MF 20% 16V	- 000	0.700.100.60	TD A NOIGTOD OCA 1006 EA
C39	1-124-455-00	S	ELECT 100MF 20% 16V	Q33 Q34	8-729-122-63 8-729-122-63	s TRANSISTOR 2SA1226-E4 s TRANSISTOR 2SA1226-E4
C40	1-124-455-00	s	ELECT 100MF 20% 16V	Q35	8-765-930-08	s TRANSISTOR 3SK163-2
C41	1-124-455-00		ELECT 100MF 20% 16V	Q36	8-729-802-80	s TRANSISTOR 2SC3661
C42	1-124-455-00		ELECT 100MF 20% 16V	Q37	8-729-122-63	s TRANSISTOR 2SA 1226-E4
C43 C46	1-124-455-00 1-163-021-00		ELECT 100MF 20% 16V CERAMIC CHIP 0.01MF 10% 50V	Q38	8-765-930-08	s TRANSISTOR 3SK 163-2
C40	1-103-021-00	8	CERAMIC CHIP 0.01MF 10% 50V	Q39 Q39	8-729-802-80	s TRANSISTOR 2SC3661
C47	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	Q40	8-729-122-63	s TRANSISTOR 2SA 1226-E4
C48	1-163-038-00		CERAMIC CHIP 0.1MF 25V	Q41	8-765-930-08	s TRANSISTOR 3SK163-2
C49	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	Q42	8-729-802-80	s TRANSISTOR 2SC3661
CNI	1-506-485-11	0	CONNECTOR, 6P, MALE	Q43	8-729-175-73	s TRANSISTOR 2SC2757-T34
CN2	1-506-759-11		CONNECTOR, 15P, MALE	Q44	8-729-100-66	s TRANSISTOR 2SC1623-L6
CN3	1-506-467-11		CONNECTOR, 2P, MALE	Q45	8-729-175-73	s TRANSISTOR 2SC2757-T34
CN4 CN5	1-506-467-11		CONNECTOR, 2P, MALE	Q46 Q48	8-729-100-66 8-729-122-63	s TRANSISTOR 2SC1623-L6 s TRANSISTOR 2SA1226-E4
CNS	1-506-467-11	0	CONNECTOR, 2P, MALE	Q40	0-129-122-03	8 TRANSISTOR 25A1220-L4
CV1	1-141-329-21	s	CAP, CHIP TRIMMER	Q49	8-729-122-63	s TRANSISTOR 2SA1226-E4
CV2	1-141-329-21	S	CAP, CHIP TRIMMER	Q50	8-729-122-63	s TRANSISTOR 2SA1226-E4
CV3	1-141-329-21	S	CAP, CHIP TRIMMER	Q51 Q52	8-729-175-73 8-729-122-63	s TRANSISTOR 2SC2757-T34 s TRANSISTOR 2SA1226-E4
IC1	8-759-234-20	s	IC TC7S08F	Q52 Q53	8-729-122-63	s TRANSISTOR 2SA1226-E4
IC2	8-759-234-20		IC TC7S08F	422	0 727 122 05	
IC3	8-759-234-20	\$	IC TC7S08F	Q54	8-729-122-63	s TRANSISTOR 2SA 1226-E4
01	0 700 100 (0		TO ANIGISTOD OS A 1007 EA	Q55	8-729-216-22	s TRANSISTOR 2SA1162-G
.02 O1	8-729-122-63 8-765-930-08		TRANSISTOR 2SA1226-E4 TRANSISTOR 3SK163-2	R1	1-216-643-11	s METAL CHIP 470 0.50% 1/10W
Ŏã	8-729-802-80		TRANSISTOR 35K103-2 TRANSISTOR 2SC3661	R2	1-216-687-11	s METAL CHIP 33K 0.50% 1/10W
Q1 Q2 Q3 Q4 Q5	8-729-122-63	S	TRANSISTOR 2SA1226-E4	R3	1-216-685-11	s METAL CHIP 27K 0.50% 1/10W
Q5	8-765-930-08	S	TRANSISTOR 3SK163-2	R8	1-216-699-11	s METAL CHIP 100K 0.50% 1/10W
06	8-729-802-80	_	TRANSISTOR 2SC3661	R9	1-216-689-11	s METAL CHIP 39K 0.50% 1/10W
Q6 Q7	8-729-122-63		TRANSISTOR 2SC3001 TRANSISTOR 2SA1226-E4	R20	1-216-639-11	s METAL CHIP 330 0.50% 1/10W
Q8 Q9	8-765-930-08	S	TRANSISTOR 3SK163-2	R21	1-216-649-11	s METAL CHIP 820 0.50% 1/10W
Q9	8-729-802-80		TRANSISTOR 2SC3661	R22	1-216-636-11	s METAL CHIP 240 0.50% 1/10W
Q10	8-729-175-73	S	TRANSISTOR 2SC2757-T34	R23 R30	1-216-636-11 1-216-603-11	s METAL CHIP 240 0.50% 1/10W s METAL CHIP 10 0.50% 1/10W
				KJU	1-210-003-11	a MILIAL CIII 100.30% 1/1011

(PA-126 BOARD (BVP-70ISP))

Ser. No.	41263-		BVP-70ISP
Ref. No.			
or Q'ty	Part No.	SP	Description
R31	1-216-656-11	s	METAL CHIP 1.6K 0.50% 1/10W
R35	1-216-643-11	S	METAL CHIP 470 0.50% 1/10W
R36	1-216-687-11	S	METAL CHIP 33K 0.50% 1/10W
R37	1-216-685-11	S	METAL CHIP 27K 0.50% 1/10W
R42	1-216-699-11	S	METAL CHIP 100K 0.50% 1/10W
R43	1-216-689-11	s	METAL CHIP 39K 0.50% 1/10W
R54	1-216-639-11	S	METAL CHIP 330 0.50% 1/10W
R55	1-216-649-11	S	METAL CHIP 820 0.50% 1/10W
R56	1-216-633-11	S	METAL CHIP 180 0.50% 1/10W
R57	1-216-633-11	S	METAL CHIP 180 0.50% 1/10W
R64	1-216-603-11	S	METAL CHIP 10 0.50% 1/10W
R65	1-216-656-11	S	METAL CHIP 1.6K 0.50% 1/10W
R66	1-216-643-11	S	METAL CHIP 470 0.50% 1/10W
R67	1-216-687-11	S	METAL CHIP 33K 0.50% 1/10W
R68	1-216-685-11	S	METAL CHIP 27K 0.50% 1/10W
R70	1-216-699-11	s	METAL CHIP 100K 0.50% 1/10W
R71	1-216-689-11	S	METAL CHIP 39K 0.50% 1/10W
R75	1-216-699-11	S	METAL CHIP 100K 0.50% 1/10W
R76	1-216-689-11	S	METAL CHIP 39K 0.50% 1/10W
R87	1-216-639-11	S	METAL CHIP 330 0.50% 1/10W
R88	1-216-649-11	s	METAL CHIP 820 0.50% 1/10W
R89	1-216-634-11	S	METAL CHIP 200 0.50% 1/10W
R90	1-216-634-11	S	METAL CHIP 200 0.50% 1/10W
R100	1-216-603-11	S	METAL CHIP 10 0.50% 1/10W
R101	1-216-657-11	S	METAL CHIP 1.8K 0.50% 1/10W
R108	1-216-698-11	s	METAL CHIP 91K 0.50% 1/10W
R109	1-216-678-11	S	METAL CHIP 13K 0.50% 1/10W
R110	1-216-643-11	S	METAL CHIP 470 0.50% 1/10W
R111	1-216-643-11	S	METAL CHIP 470 0.50% 1/10W
R112	1-216-643-11	s	METAL CHIP 470 0.50% 1/10W
RV1	1-237-032-11	s	RES, ADJ, CERMET 500
RV1	1-237-032-11	S	RES, ADJ, CERMET 500
RV3	1-237-032-11	S	RES, ADJ, CERMET 500
T/ A D	1-237-032-11	3	100,1100,00011001000

PR-138A BOARD

Ref. No. or O'ty	Part No.	SP Description	
1pc	A-7515-116-A	o MOUNTED CIRCUIT BOARD, PR-138	Α
1pc	3-711-775-01	o LEVER, PULL	
9pcs	7-627-556-37	s SCREW, +P2.6¥4 TYPE 1	
C3 C4 C5 C6 C7	1-163-038-00 1-163-038-00 1-124-499-11 1-163-035-00 1-126-151-11	S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.1MF 25V S ELECT 1MF 20% 50V S CERAMIC CHIP 0.047MF 50V S ELECT 4.7MF 20% 16V	
C8 C9 C10 C11 C12	1-163-038-00 1-163-038-00 1-163-038-00 1-163-101-00 1-135-091-00	S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 22PF 5% 50V S TANTALUM CHIP 1MF 10% 16V	
C13	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	
C14	1-163-038-00	s CERAMIC CHIP 0.1MF 25V	
C16	1-163-038-00	s CERAMIC CHIP 0.1MF 25V	
C17	1-135-159-21	s TANTALUM CHIP 10MF 10% 20V	
C18	1-135-159-21	s TANTALUM CHIP 10MF 10% 20V	
C19	1-163-038-00	s CERAMIC CHIP 0.1MF 25V	
C20	1-163-038-00	s CERAMIC CHIP 0.1MF 25V	
C21	1-124-499-11	s ELECT 1MF 20% 50V	
C22	1-163-035-00	s CERAMIC CHIP 0.047MF 50V	
C23	1-126-151-11	s ELECT 4.7MF 20% 16V	
C24 C25 C26 C27 C28	1-163-038-00 1-163-111-00 1-163-038-00 1-163-038-00 1-163-101-00	S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 56PF 5% 50V S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 22PF 5% 50V	
C29	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	
C30	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	
C32	1-163-038-00	s CERAMIC CHIP 0.1MF 25V	
C33	1-135-159-21	s TANTALUM CHIP 10MF 10% 20V	
C34	1-135-159-21	s TANTALUM CHIP 10MF 10% 20V	
C35	1-163-038-00	S CERAMIC CHIP 0.1MF 25V	
C36	1-163-038-00	S CERAMIC CHIP 0.1MF 25V	
C37	1-124-499-11	S ELECT 1MF 20% 50V	
C38	1-163-035-00	S CERAMIC CHIP 0.047MF 50V	
C39	1-126-151-11	S ELECT 4.7MF 20% 16V	
C40 C41 C42 C43 C44	1-163-038-00 1-163-038-00 1-163-038-00 1-163-101-00 1-135-091-00	S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 22PF 5% 50V S TANTALUM CHIP 1MF 10% 16V	
C45	1-135-091-00	S TANTALUM CHIP 1MF 10% 16V	
C48	1-163-038-00	S CERAMIC CHIP 0.1MF 25V	
C49	1-135-159-21	S TANTALUM CHIP 10MF 10% 20V	
C50	1-135-159-21	S TANTALUM CHIP 10MF 10% 20V	
C63	1-135-159-21	S TANTALUM CHIP 10MF 10% 20V	
C64	1-135-159-21	S TANTALUM CHIP 10MF 10% 20V	
C65	1-163-105-00	S CERAMIC CHIP 33PF 5% 50V	
C67	1-163-038-00	S CERAMIC CHIP 0.1MF 25V	
C68	1-135-153-21	S TANTALUM CHIP 2.2MF 10% 25V	
C69	1-163-141-00	S CERAMIC CHIP 0.001MF 5% 50V	
C70	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	
C71	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	
C72	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	
C73	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	
C74	1-135-091-00	s TANTALUM CHIP 1MF 10% 16V	

Ref. No. or Q'ty	Part No.	SP Description	Ref. No. or Q'ty	Part No.	SP	Description
C75 C76 C77 C78	1-135-091-00 1-163-086-00 1-163-141-00 1-163-086-00		IC11 IC12 IC13	8-759-981-51 8-759-998-12 8-759-009-07	S	IC RC1496M IC TL032CPS IC MC14053BF
C79 C80	1-163-141-00 1-163-086-00	s CERAMIC CHIP 0.001MF 5% 50V s CERAMIC CHIP 3PF 0.25PF 50V	L1 L2 L3	1-408-417-00 1-408-417-00 1-410-709-31	S	47UH 47UH CHIP 22UH
C82 C83 C84 C88	1-163-119-00 1-163-119-00 1-163-119-00 1-163-093-00	S CERAMIC CHIP 120PF 5% 50V S CERAMIC CHIP 120PF 5% 50V S CERAMIC CHIP 120PF 5% 50V S CERAMIC CHIP 10PF 5% 50V	Q1 Q2 Q3 Q4 Q5	8-729-100-66 8-729-122-63 8-729-122-63	S S	TRANSISTOR 2SC1623-L6 TRANSISTOR 2SA1226-E4 TRANSISTOR 2SA1226-E4
C89 C90	1-163-093-00 1-163-099-00	s CERAMIC CHIP 10PF 5% 50V s CERAMIC CHIP 18PF 5% 50V		8-729-109-44 8-729-122-63	S	TRANSISTOR 2SK94-X4 TRANSISTOR 2SA1226-E4
CN1 CN2 CN3 CN4 CN5	1-506-730-11 1-568-614-11 1-568-614-11 1-568-614-11 1-568-613-11	o CONNECTOR, 40P, MALE o SOCKET, SIL 3P o SOCKET, SIL 3P o SOCKET, SIL 3P o SOCKET, SIL 2P	Q6 Q7 Q8 Q9 Q10	8-729-403-29 8-729-403-29 8-729-109-44 8-729-109-44 8-765-420-10	S S S	TRANSISTOR XN6435 TRANSISTOR XN6435 TRANSISTOR 2SK94-X4 TRANSISTOR 2SK94X4 TRANSISTOR 2SK300-3-T8
CN6 CN7 CN8 CN9 CN10	1-568-615-11 1-568-614-11 1-568-614-11 1-568-614-11 1-568-612-11	SOCKET, SIL 2P S SOCKET, SIL 4P S SOCKET, SIL 3P S SOCKET, SIL 3P S SOCKET, SIL 3P O SOCKET, SIL 1P O SOCKET, SIL 1P O SOCKET, SIL 1P O SOCKET, SIL 1P	Q11 Q12 Q13 Q14 Q15	8-729-175-72 8-729-403-29 8-729-403-33 8-729-109-44 8-729-403-29	S S S	TRANSISTOR 2SC2757-T33 TRANSISTOR XN6435 TRANSISTOR XN6534-TX TRANSISTOR 2SK94-X4 TRANSISTOR XN6435
CN11 CN12 CN13	1-568-612-11 1-568-612-11 1-568-612-11	o SOCKET, SIL 1P o SOCKET, SIL 1P o SOCKET, SIL 1P	Q16 Q17 Q19 Q21 Q22	8-729-403-29 8-729-403-33 8-729-403-29 8-729-216-22 8-729-122-63	S S	TRANSISTOR XN6435 TRANSISTOR XN6534-TX TRANSISTOR XN6435 TRANSISTOR 2SA1162-G TRANSISTOR 2SA1226-E4
CV1 CV2 CV3	1-141-331-11 1-141-331-11 1-141-331-11	s CAP. CHIP TRIMMER 30PF s CAP. CHIP TRIMMER 30PF s CAP. CHIP TRIMMER 30PF	Q23 Q24 Q25	8-729-100-66 8-729-122-63 8-729-122-63	S	TRANSISTOR 2SC1623-L6 TRANSISTOR 2SA1226-E4 TRANSISTOR 2SA1226-E4
D3 D4 D5	8-719-914-13 8-719-800-76 8-719-800-76	s DIODE HZ4CLL s DIODE 1SS226 s DIODE 1SS226	Q26 Q27	8-729-109-44 8-729-175-72	S S	TRANSISTOR 2SK94-X4 TRANSISTOR 2SC2757-T33
D7 D8	8-719-914-13 8-719-800-76	s DIODE 1SS226 s DIODE HZ4CLL s DIODE 1SS226 s DIODE HZ4CLL	Q28 Q29 Q30	8-729-122-63 8-729-403-29 8-729-403-29 8-729-109-44	s s	TRANSISTOR 2SA1226-E4 TRANSISTOR XN6435 TRANSISTOR XN6435 TRANSISTOR 2SK94-X4
D11 D12 D14 D15	8-719-914-13 8-719-800-76 8-719-104-34 8-719-800-76	s DIODE HZACLL s DIODE 1SS226 s DIODE 1SS226 s DIODE 1SS226 s DIODE 1SS226 s DIODE 1SS226 s DIODE 1SS226 s DIODE HSM88AS	Q31 Q32 Q33	8-729-109-44 8-729-109-44 8-765-420-10	S	TRANSISTOR 2SK94-X4 TRANSISTOR 2SK300-3-T8
D16 D17 D18	8-719-948-47	s DIODE HSM88AS	Q34 Q35 Q36 Q37	8-729-175-72 8-729-403-29 8-729-403-32 8-729-109-44	s s	TRANSISTOR 2SC2757-T33 TRANSISTOR XN6435 TRANSISTOR XN6534 TRANSISTOR 2SK94-X4
D19 D28 DL1	8-719-948-47 8-719-800-76 1-415-490-21	s DIODE HSM88AS s DIODE 1SS226 s 180nS	Q38 Q39 Q40	8-729-403-29 8-729-403-29 8-729-403-32	S	TRANSISTOR XN6435 TRANSISTOR XN6435 TRANSISTOR XN6534
DL2 DL3 DL4	1-415-490-21 1-415-490-21 1-145-449-11	s 180nS s 180nS s 20nS+2nS	Q42 Q43	8-729-403-29 8-729-100-66	S	TRANSISTOR XN6435 TRANSISTOR 2SC1623-L6
IC1 IC2 IC3 IC4 IC5	1-807-422-11 8-759-906-53 8-759-981-51 8-759-998-12 1-807-422-11	s IC BH-1217 s IC TL062CPS s IC RC1496M s IC TL032CPS s IC BH-1217	Q44 Q45 Q46 Q47 Q48	8-729-122-63 8-729-122-63 8-729-109-44 8-729-122-63 8-729-403-29	S S S	TRANSISTOR 2SA1226-E4 TRANSISTOR 2SA1226-E4 TRANSISTOR 2SK94-X4 TRANSISTOR 2SA1226-E4 TRANSISTOR XN6435
IC6 IC7 IC8 IC9 IC10	8-759-906-53 8-759-981-51 8-759-998-12 1-807-422-11 8-759-906-53	s IC TL062CPS s IC RC1496M s IC TL032CPS s IC BH-1217 s IC TL062CPS	Q49 Q50 Q51 Q52 Q53	8-729-403-29 8-729-109-44 8-729-109-44 8-765-420-10 8-729-175-72	S S S	TRANSISTOR XN6435 TRANSISTOR 2SK94-X4 TRANSISTOR 2SK94-X4 TRANSISTOR 2SK300-3-T8 TRANSISTOR 2SC2757-T33

(PR-138	A BOARD)			(PR-138)	A BOARD)		
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
Q54 Q55 Q56 Q57 Q58	8-729-403-29 8-729-403-32 8-729-109-44 8-729-403-29 8-729-403-29	s s s	TRANSISTOR XN6435 TRANSISTOR XN6534 TRANSISTOR 2SK94-X4 TRANSISTOR XN6435 TRANSISTOR XN6435	R45 R46 R47 R48 R52	1-216-669-11 1-216-627-11 1-216-627-11 1-216-683-11 1-216-663-11	s s	METAL CHIP 5.6K 0.50% 1/10W METAL CHIP 100 0.50% 1/10W METAL CHIP 100 0.50% 1/10W METAL CHIP 22K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W
Q59 Q61 Q62 Q63 Q64	8-729-403-32 8-729-403-29 8-729-100-66 8-729-403-32 8-729-403-32	s s s	TRANSISTOR XN6534 TRANSISTOR XN6435 TRANSISTOR 2SC1623-L6 TRANSISTOR XN6534 TRANSISTOR XN6534	R54 R60 R61 R62 R65	1-216-639-11 1-216-683-11 1-216-683-11 1-216-658-11 1-216-699-11	s s s	METAL CHIP 330 0.50% 1/10W METAL CHIP 22K 0.50% 1/10W METAL CHIP 22K 0.50% 1/10W METAL CHIP 2K 0.50% 1/10W METAL CHIP 100K 0.50% 1/10W
Q65 Q66 Q67 Q68 Q69	8-729-100-66 8-729-403-32 8-729-403-32 8-729-100-66 8-729-403-32	S S	TRANSISTOR 2SC1623-L6 TRANSISTOR XN6534 TRANSISTOR XN6534 TRANSISTOR 2SC1623-L6 TRANSISTOR XN6534	R68 R72 R73 R74 R76	1-216-687-11 1-216-631-11 1-216-667-11 1-216-643-11 1-216-644-11	s s	METAL CHIP 33K 0.50% 1/10W METAL CHIP 150 0.50% 1/10W METAL CHIP 4.7K 0.50% 1/10W METAL CHIP 470 0.50% 1/10W METAL CHIP 510 0.50% 1/10W
Q70 Q71 Q72 Q73 Q74	8-729-216-22 8-729-403-32 8-729-122-63 8-729-216-22 8-729-175-72	S	TRANSISTOR 2SA1162-G TRANSISTOR XN6534 TRANSISTOR 2SA1226-E4 TRANSISTOR 2SA1162-G TRANSISTOR 2SC2757-T33	R82 R83 R85 R86 R87	1-216-644-11 1-216-644-11 1-216-641-11 1-216-651-11 1-216-661-11	S S S	METAL CHIP 510 0.50% 1/10W METAL CHIP 510 0.50% 1/10W METAL CHIP 390 0.50% 1/10W METAL CHIP 1K 0.50% 1/10W METAL CHIP 2.7K 0.50% 1/10W
Q75 Q76 Q77 Q78	8-729-100-66 8-729-100-66 8-729-100-66 8-729-403-32	S S S	TRANSISTOR 2SC1623-L6 TRANSISTOR 2SC1623-L6 TRANSISTOR 2SC1623-L6 TRANSISTOR XN6534	R88 R89 R90 R92 R94	1-216-661-11 1-216-671-11 1-216-663-11 1-216-653-11 1-216-675-11	S S	METAL CHIP 2.7K 0.50% 1/10W METAL CHIP 6.8K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 1.2K 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W
R4 R5 R7 R8 R9	1-216-644-11 1-216-644-11 1-216-641-11 1-216-651-11 1-216-661-11	S S	METAL CHIP 510 0.50% 1/10W METAL CHIP 510 0.50% 1/10W METAL CHIP 390 0.50% 1/10W METAL CHIP 1K 0.50% 1/10W METAL CHIP 2.7K 0.50% 1/10W	R95 R96 R97 R98 R99	1-216-667-11 1-216-671-11 1-216-679-11 1-216-687-11 1-216-677-11	S S	METAL CHIP 4.7K 0.50% 1/10W METAL CHIP 6.8K 0.50% 1/10W METAL CHIP 15K 0.50% 1/10W METAL CHIP 33K 0.50% 1/10W METAL CHIP 12K 0.50% 1/10W
R10 R11 R12 R14 R15	1-216-661-11 1-216-671-11 1-216-663-11 1-216-653-11 1-216-675-11	s s s	METAL CHIP 2.7K 0.50% 1/10W METAL CHIP 6.8K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 1.2K 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W	R100 R101 R106 R107 R108	1-216-683-11 1-216-675-11 1-216-663-11 1-216-615-11 1-216-615-11	S S	METAL CHIP 22K 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 33 0.50% 1/10W METAL CHIP 33 0.50% 1/10W
R16 R17 R18 R20 R21	1-216-671-11 1-216-679-11 1-216-667-11 1-216-687-11 1-216-677-11	s s s	METAL CHIP 6.8K 0.50% 1/10W METAL CHIP 15K 0.50% 1/10W METAL CHIP 4.7K 0.50% 1/10W METAL CHIP 33K 0.50% 1/10W METAL CHIP 12K 0.50% 1/10W	R109 R110 R111 R112 R113	1-216-611-11 1-216-630-11 1-216-611-11 1-216-651-11 1-216-634-11	S S S	METAL CHIP 22 0.50% 1/10W METAL CHIP 130 0.50% 1/10W METAL CHIP 22 0.50% 1/10W METAL CHIP 1K 0.50% 1/10W METAL CHIP 200 0.50% 1/10W
R22 R23 R25 R26 R27	1-216-683-11 1-216-675-11 1-216-663-11 1-216-615-11 1-216-615-11	S S S	METAL CHIP 22K 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 33 0.50% 1/10W METAL CHIP 33 0.50% 1/10W	R114 R115 R117 R119 R120	1-216-651-11 1-216-655-11 1-216-655-11 1-216-638-11 1-216-651-11	s s s	METAL CHIP 1K 0.50% 1/10W METAL CHIP 1.5K 0.50% 1/10W METAL CHIP 1.5K 0.50% 1/10W METAL CHIP 300 0.50% 1/10W METAL CHIP 1K 0.50% 1/10W
R28 R29 R30 R31 R32	1-216-611-11 1-216-630-11 1-216-611-11 1-216-651-11 1-216-634-11	\$ \$ \$ \$	METAL CHIP 22 0.50% 1/10W METAL CHIP 130 0.50% 1/10W METAL CHIP 22 0.50% 1/10W METAL CHIP 1K 0.50% 1/10W METAL CHIP 200 0.50% 1/10W	R121 R122 R123 R125 R126	1-216-651-11 1-216-665-11 1-216-642-11 1-216-669-11 1-216-627-11	S S S	METAL CHIP 3.9K 0.50% 1/10W METAL CHIP 430 0.50% 1/10W
R33 R36 R37 R38 R39	1-216-651-11 1-216-638-11 1-216-665-11 1-216-655-11 1-216-655-11	S S	METAL CHIP 1K 0.50% 1/10W METAL CHIP 300 0.50% 1/10W METAL CHIP 3.9K 0.50% 1/10W METAL CHIP 1.5K 0.50% 1/10W METAL CHIP 1.5K 0.50% 1/10W	R127 R128 R132 R133 R135	1-216-627-11 1-216-675-11 1-216-663-11 1-216-669-11 1-216-669-11	S S S	METAL CHIP 100 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 5.6K 0.50% 1/10W METAL CHIP 5.6K 0.50% 1/10W
R40 R41 R42 R43 R44	1-216-651-11 1-216-651-11 1-216-642-11 1-216-619-11 1-216-675-11	S S	METAL CHIP 1K 0.50% 1/10W METAL CHIP 1K 0.50% 1/10W METAL CHIP 430 0.50% 1/10W METAL CHIP 47 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W			-	

(PR-138A BOARD)

R209

R210

R211

R215

R219

R226

R227

R229

R230

R259

1-216-663-11

1-216-669-11

1-216-669-11

1-216-639-11

1-216-658-11

1-216-631-11

1-216-643-11

1-216-667-11

1-216-644-11

1-216-640-11

s METAL CHIP 3.3K 0.50% 1/10W s METAL CHIP 5.6K 0.50% 1/10W

s METAL CHIP 5.6K 0.50% 1/10W s METAL CHIP 330 0.50% 1/10W

s METAL CHIP 2K 0.50% 1/10W

s METAL CHIP 150 0.50% 1/10W

s METAL CHIP 470 0.50% 1/10W s METAL CHIP 4.7K 0.50% 1/10W s METAL CHIP 510 0.50% 1/10W s METAL CHIP 360 0.50% 1/10W

1-228-473-00

1-237-032-11

1-570-610-11

1-570-857-11

1-570-857-11

RV33

RV34

S3

S4

THI

TH3

TH5

s METAL 5K

s METAL 500

1-807-361-11 s THERMISTOR, POSITIVE 3.3K 1-807-361-11 s THERMISTOR, POSITIVE 3.3K

1-807-361-11 s THERMISTOR, POSITIVE 3.3K

s TOGGLE

s SLIDE

s SLIDE

PR-139	BOARD			PR-140 BOARD				
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description	
	1-163-038-00 1-135-157-21 1-135-091-00 1-163-038-00 1-163-038-00	\$ \$ \$ \$ \$	CERAMIC CHIP 0.1MF 25V TANTALUM CHIP 10MF 10% 6.3V TANTALUM CHIP 1MF 10% 16V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	C1 C2 C3 C4 C5	1_163_038-00	S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V TANTALUM CHIP 10MF 10% 6.3V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	
C6 C7 C8 C9 C10			CERAMIC CHIP 0.1MF 25V TRANTALUM CHIP 10MF 10% 6.3V TRANTALUM CHIP 1MF 10% 16V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V		1-163-038-00	S S	TANTALUM CHIP 10MF 10% 6.3V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V TANTALUM CHIP 1MF 10% 16V CERAMIC CHIP 0.1MF 25V	
C11 C12 C13 C14 C15	1-163-038-00 1-135-157-21 1-135-091-00 1-163-038-00 1-163-038-00	S S S S	CERAMIC CHIP 0.1MF 25V TRANTALUM CHIP 10MF 10% 6.3V TRANTALUM CHIP 1MF 10% 16V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	C12 C13 C14 C15 C17	1-163-038-00	S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V TANTALUM CHIP 10MF 10% 6.3V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	
CN2 CN3 CN4 CN5 CN6	1-568-623-11 1-568-623-11 1-568-623-11 1-568-622-11 1-568-624-11	0 0 0	PIN, SIL 3P PIN, SIL 3P PIN, SIL 3P PIN SIL 2P	C18 C19 C20 C21	1-163-038-00 1-135-157-21 1-163-101-00	S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V TANTALUM CHIP 10MF 10% 6.3V CERAMIC CHIP 22PF 5% 50V	
CN7	1-568-623-11		PIN, SIL 3P	CN8 CN9 CN10	1-568-623-11 1-568-623-11 1-568-621-11	0	PIN, SIL 3P PIN, SIL 3P PIN, SIL 1P	
IC1 IC2	8-759-981-51	S	PIN, SIL 4P PIN, SIL 3P IC RC1496M IC RC1496M IC RC1496M	CN11 CN12	1-568-621-11 1-568-621-11	0	PIN, SIL IP PIN, SIL IP	
IC3 Q1	8-729-403-32		THE STATE OF THE S	CN13	1-568-621-11		PIN, SIL 1P	
Q2 Q3 Q4 Q5	8-729-109-44	S S S	TRANSISTOR 2SK94-X4 TRANSISTOR XN6501 TRANSISTOR XN6534 TRANSISTOR 2SK94-X4	D1 D3 D4 D5 D6	8-719-101-97 8-719-948-47 8-719-101-97 8-719-101-97 8-719-104-34	s s s	DIODE 1SS97-1 DIODE HSM88AS DIODE 1SS97-1 DIODE 1SS97-1 DIODE 1S2836	
Q6 Q7 Q8 Q9	8-729-109-44	S S S	TRANSISTOR XN6501 TRANSISTOR XN6534 TRANSISTOR 2SK94-X4 TRANSISTOR XN6501	IC1 IC2 IC3 IC4	8-759-906-53 8-759-906-53 8-759-009-07 8-759-906-53	S S	IC TL062CPS IC TL062CPS IC MC14053BF IC TL062CPS	
R22 R42 R43 R62 R63	1-216-693-11	S S	METAL CHIP 30K 0.50% 1/10W METAL CHIP 56K 0.50% 1/10W METAL CHIP 30K 0.50% 1/10W METAL CHIP 56K 0.50% 1/10W METAL CHIP 30K 0.50% 1/10W	Q1 Q2 Q3 Q4 Q5	8-729-403-32	s s s	TRANSISTOR XN6534 TRANSISTOR XN6534 TRANSISTOR XN6534 TRANSISTOR 2SK94-X4 TRANSISTOR XN6435	
R65 R66 R68 R69	1-215-433-00 1-215-433-00 1-215-433-00 1-216-693-11	S	METAL CHIP 3.3K 1% 1/6W METAL CHIP 3.3K 1% 1/6W METAL CHIP 3.3K 1% 1/6W METAL CHIP 56K 0.50% 1/10W	R1 R2 R3 R4	1-216-673-11 1-216-663-11 1-216-686-11 1-216-686-11	S	METAL CHIP 8.2K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 30K 0.50% 1/10W METAL CHIP 30K 0.50% 1/10W	
RV1 RV2	1-237-035-11 1-237-035-11	S	METAL 5K METAL 5K	R8	1-216-673-11	S	METAL CHIP 8.2K 0.50% 1/10W METAL CHIP 750 0.50% 1/10W	
RV3	1-237-035-11	S	METAL 5K	R9 R10 R11 R17 R18	1-216-648-11 1-216-649-11 1-216-669-11 1-216-679-11 1-216-643-11	S S	METAL CHIP 820 0.50% 1/10W METAL CHIP 5.6K 0.50% 1/10W	
				R19 R21 R22 R23 R24	1-216-130-11 1-216-683-11 1-216-672-11 1-216-686-11 1-216-683-11	S	METAL CHIP 30K 0.50% 1/10W	

(PR-140 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R25 R26 R27 R30 R31	1-216-691-11 1-216-679-11 1-216-665-11 1-216-686-11 1-216-675-11	\$ \$ \$ \$	METAL CHIP 47K 0.50% 1/10W METAL CHIP 15K 0.50% 1/10W METAL CHIP 3.9K 0.50% 1/10W METAL CHIP 30K 0.50% 1/10W METAL CHIP 10K 0.50% 1/10W
R32 R34 R35 R36	1-216-686-11 1-216-686-11 1-216-663-11 1-216-656-11	S S S	METAL CHIP 30K 0.50% 1/10W METAL CHIP 30K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 1.6K 0.50% 1/10W
RV1 RV3 RV4 RV5 RV6	1-237-035-11 1-237-035-11 1-237-034-11 1-237-036-11	\$ \$ \$ \$	METAL 5K METAL 5K METAL 2K METAL 2K METAL 10K
RV7 RV8 RV9 RV10	1-237-034-11 1-237-034-11 1-237-034-11 1-237-034-11	\$ \$ \$ \$	METAL 2K METAL 2K METAL 2K METAL 2K

PS-224 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
lpc lpc	A-7515-126-A 3-711-775-01	0	MOUNTED CIRCUIT BOARD, PS-224 LEVER, PULL
C3 C4 C5 C6 C7	1-164-232-11 1-162-722-11 1-124-479-11 1-127-519-11 1-136-173-00	S	CERAMIC CHIP 0.01MF 20% 100V CERAMIC 330PF 5% 50V ELECT 330MF 20% 25V ELECT (SOLID) 100MF 20% 20V FILM 0.47uF 5% 50V
C8 C9 C10 C11 C12	1-136-173-00 1-127-519-11 1-163-117-00 1-127-519-11 1-127-519-11	8	FILM 0.47uF 5% 50V ELECT (SOLID) 100MF 20% 20V CERAMIC CHIP 100PF 5% 50V ELECT (SOLID) 100MF 20% 20V ELECT (SOLID) 100MF 20% 20V
C17 C18 C19 C20 C21	1-163-038-00 1-130-483-00 1-131-583-11 1-124-140-00 1-124-120-11	\$ \$ \$ \$ \$	MYLAR 0.01MF 5% 50V TANTALUM 150uF 20% 20V
C22 C25 C26 C27 C32	1-127-515-11 1-127-518-11 1-127-515-11 1-127-518-11 1-163-038-00	\$ \$ \$ \$.	ELECT (SOLID) 47MF 20% 10V
C36 C37 C39 C40 C41	1-163-023-00 1-124-273-00 1-124-270-11 1-124-499-11 1-163-038-00	S S S S	ELECT, NONPOLAR 0.47uF 20% 50V ELECT 1MF 20% 50V
C42 C45 C46 C48 C51	1-124-455-00 1-163-038-00 1-163-038-00 1-124-766-00 1-127-519-11	S S S S	THE TAX TO STORY AND A 1 TO AND 150V
C52 C56 C63 C64 C65	1-163-038-00 1-162-724-11 1-164-232-11 1-135-149-21 1-163-038-00	S S S S	CERAMIC CHIP 0.1MF 25V CERAMIC 390PF 5% 50V CERAMIC CHIP 0.01MF 20% 100V TANTALUM CHIP 2.2MF 10% 10V CERAMIC CHIP 0.1MF 25V
C66 C67	1-163-113-00 1-135-177-21	S	CERAMIC CHIP 68PF 5% 50V TANTALUM CHIP 1MF 10% 25V
CN1	1-506-730-11	0	CONNECTOR, 40P MALE
D2 D3 D4 D5 D6	8-719-118-38 8-719-981-00 8-719-800-76 8-719-800-76 8-719-942-31	S S S S	DIODE 1SZ46A DIODE ERB81-004 DIODE 1SS123 DIODE 1SS123 DIODE HZ3ALL
D7 D9 D10 D11 D12	8-719-911-55 8-719-100-05 8-719-800-76 8-719-908-06 8-719-908-06	\$ \$ \$ \$ \$	DYODD 400400
D13 D14 D15 D16 D17	8-719-908-06 8-719-908-06 8-719-908-06 8-719-908-06 8-719-908-06	S S S S	DIODE ERA81-005 DIODE ERA81-005 DIODE ERA81-005

(PS-224	BOAKD)

Ref. No.

Q15

Q21

Q22 Q23 Q24

Q26

Q27 Q28

Q29

Q31

Q35

Q36

Q37 Q38

Q39

Q42

8-729-271-23

8-729-271-23

8-729-271-23

8-729-216-22

8-729-800-75

8-729-807-87 8-729-807-87

8-729-271-23

8-729-109-44

8-729-800-75

8-729-100-66

8-729-100-66

8-729-100-66 8-729-216-22

8-729-216-22

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or Q'ty Part No. SP Description s DIODE ERA81-005 8-719-908-06 D18 8-719-951-13 s DIODE HZ5CLL D19 8-719-951-13 s DIODE HZ5CLL D20 s DIODE 1SS97-1 8-719-101-97 D21 s DIODE HZ6C2L 8-719-910-68 D22 8-719-100-05 s DIODE 1S2837 D23 s DIODE 1S2837 D24 8-719-100-05 8-719-951-13 s DIODE HZ5CLL D26 D27 8-719-800-76 s DIODE 1SS123 8-719-800-76 s DIODE 1SS123 D28 8-719-911-19 s DIODE 1SS119 D31 s IC TL494CNS 8-759-914-04 IC1 s IC 1L494CNS s IC LM2904M s IC LM2904M s IC TL064CNS s IC CX518 8-759-981-69 IC2 IC3 8-759-981-69 IC4 8-759-906-54 IC5 8-759-605-18 8-759-981-69 s IC LM2904M 8-759-009-07 s IC MC14053BF IC6 IC7 1-408-142-21 s 22.5MH 1-408-549-00 s 150MH L2 1-421-013-00 s HOLIZONTAL CHOKE 25uH 1-421-013-00 s HOLIZONTAL CHOKE 25uH L3 L5 1-408-427-00 S 330uH 1-408-423-00 s 150uH L6 1-421-013-00 s HOLIZONTAL CHOKE 25uH 1-421-013-00 s HOLIZONTAL CHOKE 25uH L7 L8 L9 1-408-429-00 s 470uH 8-729-113-33 s TRANSISTOR 2SB733-4 8-729-113-33 s TRANSISTOR 2SB733-4 Q3 Q4 Q8 s TRANSISTOR 2SC2712 s TRANSISTOR 2SA1282-F 8-729-271-23 8-729-600-82 Q10 8-729-216-22 s TRANSISTOR 2SA1162 Q11 Q12 Q13 Q14 TRANSISTOR 2SD773-4 8-729-177-33 S 8-729-177-33 TRANSISTOR 2SD773-4 S TRANSISTOR 2SB1295-UL6 TRANSISTOR 2SA1282-F 8-729-807-87 S 8-729-600-82 S s TRANSISTOR 2SD773 8-729-177-32

(PS-224 BOARD)

Q43 8-729-216-22 s TRANSISTOR 2SA1162-G Q44 8-729-100-66 s TRANSISTOR 2SA1623 Q45 8-729-100-66 s TRANSISTOR 2SA1623 R55 1-216-675-11 s METAL CHIP 10K 0.50% 1/10W	
R55 1-216-675-11 s METAL CHIP 10K 0.50% 1/10W	
R71 1-216-687-11 s METAL CHIP 33K 0.50% 1/10W R72 1-216-679-11 s METAL CHIP 15K 0.50% 1/10W R73 1-216-673-11 s METAL CHIP 8.2K 0.50% 1/10W R74 1-216-677-11 s METAL CHIP 12K 0.50% 1/10W	
R127 1-216-679-11 s METAL CHIP 15K 0.50% 1/10W R131 1-216-685-11 s METAL CHIP 27K 0.50% 1/10W R132 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W	
RV1 1-228-457-00 s METAL 2K RV2 1-228-456-00 s METAL 1K RV3 1-228-457-00 s METAL 2K RV4 1-228-475-00 s METAL 20K RV5 1-228-472-00 s METAL 2K	
RV6 1-228-461-00 s METAL 50K RV7 1-237-036-41 s METAL 10K	
S1 1-553-510-00 s SLIDE S2 1-570-857-11 s SLIDE	
T1 1-448-363-21 s TRANSFORMER, DC-DC CONVERT	TER

TRANSISTOR 2SC2712 TRANSISTOR 2SC2712

TRANSISTOR 2SC2712 TRANSISTOR 2SA1162

s TRANSISTOR 2SD1048X7

s TRANSISTOR 2SB1295-UL6 s TRANSISTOR 2SB1295-UL6

s TRANSISTOR 2SC2712 s TRANSISTOR 2SK94

s TRANSISTOR 2SD1048X7

TRANSISTOR 2SA1623

s TRANSISTOR 2SA1623 s TRANSISTOR 2SA1162-G

s TRANSISTOR 2SA1162-G

s TRANSISTOR 2SA1623

RG-20P	BOARD			SG-143A BOARD					
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description		
1pc	A-7513-584-A		MOUNTED CIRCUIT BOARD, RG-20	1pc 9pcs	3-621-124-00	0	MOUNTED CIRCUIT BOARD, SG-143AP SPACER		
C1 C3 C4	1-163-038-00 1-107-019-00 1-107-042-00	S	CERAMIC CHIP 0.1MF 25V MICA 1PF 0.5PF 500V MICA 2.2PF 0.5PF 500V	2pcs 2pcs	3-669-595-00 3-711-767-01	S	WASHER (2), STOPPER SCREW, STOPPER		
C6 C8	1-163-038-00 1-163-038-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	C2 C4 C5	1-163-133-00 1-163-038-00 1-163-141-00	S	CERAMIC CHIP 470PF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.001MF 5% 50V		
CN1 CN2 CN3	1-506-467-11 1-506-472-11 1-506-476-11	0	CONNECTOR, 2P, MALE CONNECTOR, 7P, MALE CONNECTOR, 11P, MALE	C7 C8	1-163-038-00 1-162-724-11	s s	CERAMIC CHIP 0.1MF 25V		
CN4	1-506-467-11	0	CONNECTOR, 2P, MALE	C10 C11	1-163-038-00 1-163-093-00 1-163-038-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 10PF 5% 50V CERAMIC CHIP 0.1MF 25V		
IC1 IC2 IC3	8-759-200-79 8-741-135-60 8-759-200-81	S	IC TC4049BF IC BX1356 IC TC4053BF	C12 C14 C18	1-163-038-00 1-163-035-00	s	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.047MF 50V		
Q1 Q2 Q3	8-729-216-22 8-729-216-22 8-729-100-66	S	TRANSISTOR 2SA1162 TRANSISTOR 2SA1162 TRANSISTOR 2SC1623	C19 C26 C32	1-163-133-00 1-163-038-00 1-162-872-11	S	CERAMIC CHIP 470PF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC 51PF 5% 50V		
R3	1-216-651-11	s	METAL CHIP 1K 0.50% 1/10W	C33 C34	1-162-872-11 1-163-038-00	S			
R4 R5 R6 R7	1-216-685-11 1-216-665-11 1-216-661-11 1-216-661-11	S S	METAL CHIP 27K 0.50% 1/10W METAL CHIP 3.9K 0.50% 1/10W METAL CHIP 2.7K 0.50% 1/10W METAL CHIP 2.7K 0.50% 1/10W	C37 C38 C39	1-163-038-00 1-162-718-11 1-163-038-00	S, S	CERAMIC CHIP 0.1MF 25V CERAMIC 220PF 5% 50V CERAMIC CHIP 0.1MF 25V		
R8 R16	1-216-651-11 1-216-624-11	s s	METAL CHIP 1K 0.50% 1/10W METAL CHIP 75 0.50% 1/10W	C40 C41	1-163-038-00 1-163-038-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V		
RV1	1-228-455-00	s	METAL 500	C42 C43 C45	1-163-038-00 1-107-210-00 1-164-232-11	S	CERAMIC CHIP 0.1MF 25V MICA 22PF 5% 500V CERAMIC CHIP 0.01MF 20% 100V		
S1 S2	1-570-609-11 1-570-608-11 1-570-988-11	8	SWITCH, TOGGLE TOGGLE SWITCH, TOGGLE	C46 C47	1-163-141-00 1-162-673-11	S	CERAMIC CHIP 0.001MF 5% 50V CERAMIC 37PF 5% 50V		
S3 S4	1-570-839-11		SLIDE	C48 C49 C51 C53	1-163-117-00 1-102-951-00 1-163-038-00 1-163-038-00	S S	CERAMIC CHIP 100PF 5% 50V CERAMIC 15PF 5% 50V CERAMIC CHIP 120PF 5% 50V CERAMIC CHIP 0.1MF 25V		
				C55	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V		
			,	C56	1-163-011-11		CERAMIC CHIP 0.0015uF 10% 50V CONNECTOR, 40P MALE		
				CN1 D1	1-506-731-21 8-719-800-76		DIODE 1SS123		
				D2 D3 D4 D5	8-719-800-76 8-719-948-76 8-719-921-12 8-719-100-03	S S S	DIODE 1SS123 DIODE HSM88AS DIODE HZ2BLL		
				D6 D7 D8 D9 D10	8-719-100-05 8-719-911-19 8-719-100-03 8-719-100-03 8-719-948-47	s s s	DIODE 1S2837 DIODE 1SS119 DIODE 1S2835 DIODE 1S2835 DIODE HSM88AS		
				IC1 IC2 IC3 IC4 IC5	8-757-930-11 8-759-907-21 8-759-009-07 8-759-200-79 8-759-200-79	s s s	IC CX7930A IC CX7969 IC MC14053BF IC TC4049BF IC TC4049BF		
				IC6 IC7 IC8 IC9 IC10	8-759-204-93 8-759-906-53 1-809-046-01 8-741-101-33 8-759-239-34	s s s	IC TC50H001F IC TL062CPS IC HYBRID IC SBX1649-01 IC TC74HC4358AF		
							TO TO AM		

IC11

1-808-514-11 s IC IB-37

(SG-143	A BOARD)			SW-115	A BOARD		
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
IC12	8-759-009-07		IC MC14053BF	1pc	1-618-175-12	0	PRINTED CIRCUIT BOARD, SW-115
IC13 IC14	1-808-513-12 8-759-929-21	S	IC IB-38 IC TLC27L2CPS	CN1 CN2	1-506-469-11 1-506-467-11		CONNECTOR, 4P, MALE CONNECTOR, 2P, MALE
L1 L2 L3 L4 L5	1-408-978-21 1-408-978-21 1-408-417-21 1-408-417-21 1-408-417-21	S S S	INDUCTOR 47uH INDUCTOR 47uH 47uH 47uH 47uH	D1 D2 D3 D4	8-719-910-98 8-719-911-19 8-719-911-19 8-719-911-19	S	DIODE HZ9C2L DIODE 1SS119 DIODE 1SS119 DIODE 1SS119
L6 L7 L8 L9 L10	1-408-170-00 1-408-417-21 1-410-513-11 1-410-513-11 1-408-417-21	s s s	INDUCTOR 18uH 47uH 22uH 22uH 47uH	R1 R2 R3	1-249-423-11 1-249-429-11 1-249-429-11 1-554-356-00	s s	CARBON 3.3K 5% 1/4W CARBON 10K 5% 1/4W CARBON 10K 5% 1/4W SWITCH, TOGGLE
L11 L12 L13	1-408-417-21 1-408-417-21 1-410-517-11	s s	47uH 47uH INDUCTOR 47uH	S2 S3 S4	1-554-400-00 1-554-400-00 1-554-356-00	S	SWITCH, TOGGLE SWITCH, TOGGLE SWITCH, TOGGLE
Q2 Q3 Q4 Q5 Q6	8-729-216-22 8-729-216-22 8-729-216-22 8-729-216-22 8-729-175-73	S	TRANSISTOR 2SA1162 TRANSISTOR 2SA1162 TRANSISTOR 2SA1162 TRANSISTOR 2SA1162 TRANSISTOR 2SC2757		BOARD		
Q7 Q8	8-729-216-22	s	TRANSISTOR 2SA1162	Ref. No. or Q'ty		SP	Description
Q8 Q9	8-729-100-66 8-729-216-22			1pc	1-618-177-11	0	PRINTED CIRCUIT BOARD, SW-116
R33	1-215-473-00	S	METAL 150K 1% 1/6W METAL CHIP 15K 0.50% 1/10W	CN1	1-506-484-11	0	CONNECTOR, 5P, MALE
R40 R44 R67 R68	1-216-679-11 1-216-680-11 1-216-663-11 1-216-699-11	s s	METAL CHIP 16K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 100K 0.50% 1/10W	S1	1-554-395-00	S	SWITCH, TOGGLE
R69	1-216-691-11	s	METAL CHIP 47K 0.50% 1/10W				
RV1	1-228-460-00 1-228-474-00		METAL 20K METAL 10K		BOARD		
RV3 RV4 RV5	1-228-475-00 1-228-460-00	S	METAL 20K METAL 20K	Ref. No or Q'ty	Part No.	SP	Description
S1 S4 S5 S6 S7	1-553-925-00 1-570-857-11 1-570-857-11 1-570-374-12 1-570-857-11	s s	ROTARY SLIDE SLIDE SLIDE SLIDE	lpc lpc lpc lpc	1-562-147-11 1-562-735-11 1-563-088-11 1-623-749-11	0 0 0	PLUG HOUSING, 2P PLUG HOUSING, 2P PLUG CONTACT, FEMALE, AWG24-30 PRINTED CIRCUIT BOARD, SW-256
X1	1-567-644-11		14.31818MHz	CN1	1-506-484-11		CONNECTOR, 5P, MALE
211	130, 011 11	-		S1	1-554-396-00	S	SWITCH, TOGGLE
SW-114	BOARD			SW-425	BOARD		
Ref. No or Q'ty). Part No.	SI	P Description	Ref. No	. D . N	ar.) Description
1pc	1-618-176-12	. c	PRINTED CIRCUIT BOARD, SW-114	_	Part No.		Description PRINTED CIRCUIT BOARD, SW-425
R1	1-249-405-11	S	CARBON 100 5% 1/4W	lpc	1-633-210-11		CONNECTOR, 6P, MALE
S1	1-552-539-00) s	SWITCH, KEY BOARD	CN1	1-566-393-21		
				S1 S2 S3	1-570-984-11 1-570-984-11 1-570-985-11	s	SWITCH, TOGGLE SWITCH, TOGGLE SWITCH, TOGGLE

TG-51P BOARD

Ser. No.	40386- 41001-41262	}	BVP-70P BVP-70ISP	Ser. No.	40386- 41001-41262		BVP-70P BVP-70ISP
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
C1	1-135-161-21	S	TANTALUM CHIP 22MF 10% 10V	CP1	1-567-653-21	s	28MHz
C2	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	D.1	0.710.000.76	_	DIODE 199122
C3	1-163-141-00	S	CERAMIC CHIP 0.001MF 5% 50V	D1 D2	8-719-800-76		DIODE 1SS123
C4	1-135-166-21	S	TANTALUM CHIP 47MF 20% 6.3V	D2	8-719-100-03		DIODE 1S2835
C5	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	צע	8-719-914-12		DIODE HZ4BLL
				D4	8-719-914-12	S	DIODE HZ4BLL
C6	1-135-162-21	S	TANTALUM CHIP 33uF 10% 6.3VW	D5	8-719-914-12	S	DIODE HZ4BLL
C7	1-163-038-00	\$	CERAMIC CHIP 0.1MF 25V				DDI 4371 INT 40 0
C8	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	DL1	1-415-639-11	S	DELAY LINE 10nS
C9	1-135-076-21	S	TANTALUM CHIP 1uF 10% 35V				1G G77D0000
C10	1-163-038-00	· 8	CERAMIC CHIP 0.1MF 25V	IC1	8-759-145-51		IC CXD8002
				IC2	8-752-329-33	S	IC CXD1251Q
C11	1-163-141-00	S	CERAMIC CHIP 0.001MF 5% 50V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 3PF 0.25PF 50V	IC4	8-759-234-20		IC TC7S08F
C12	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	IC7	8-759-008-91		IC MC14023BF
C14	1-163-086-00	S	CERAMIC CHIP 3PF 0.25PF 50V	IC8	8-759-234-20	S	IC TC7S08F
C15	1-163-141-00	· S	CERAMIC CHIP 0.001MF 3% 30V		0.050.004.00	_	TO TOTOLOGE
C16	1-163-141-00	8	CERAMIC CHIP 0.001MF 5% 50V	IC9	8-759-234-20		IC TC7S08F
				IC10	8-759-231-30		IC TC4S30F
C17	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	IC11	8-759-231-30		IC TC4S30F IC TC4S30F
C18	1-135-161-21	S	TANTALUM CHIP 22MF 10% 10V	IC12	8-759-231-30		IC TC4S30F
C19	1-135-161-21	8	TANTALUM CHIP 22MF 10% 10V	IC13	8-759-231-30	S	IC 1C4530F
C20	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	1016	0.750.000.67	_	IC MC14066BF
C21	1-135-161-21	S	TANTALUM CHIP 22MF 10% 10V	IC15	8-759-008-67		
				IC16	8-759-231-30		IC TC4S30F IC TC4S30F
C22	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	IC17	8-759-231-30	5	IC TC4S30F
C23	1-135-166-21	S	TANTALUM CHIP 47MF 20% 6.3V TANTALUM CHIP 15uF 10% 16V	IC18	8-759-231-30 8-759-929-21		IC TLC27L2CPS
C25	1-135-160-21	S	TANTALUM CHIP IOUF 10% 16V	IC19	0-139-949-41	3	IC TECZ/EZCI S
C26	1-135-161-21		TANTALUM CHIP 22MF 10% 10V	IC20	8-759-929-21		IC TLC27L2CPS
C27	1-135-161-21	S	TANTALUM CHIP 22MF 10% 10V	IC20 IC21	8-759-234-20		IC TC7S08F
con	05 161 01		TANTALLING CUID 22NG 100, 10V	IC22	8-759-231-30		IC TC4S30F
C28	1-135-161-21		TANTALUM CHIP 22MF 10% 10V	IC23	8-759-234-20		IC TC7S08F
C29	1-135-160-21	S	TANTALUM CHIP 15uF 10% 16V TANTALUM CHIP 15uF 10% 16V	1023	0-139-234-20		10 10/0002
C30	1-135-160-21	S	TANTALUM CHIP 15uF 10% 16V TANTALUM CHIP 15uF 10% 16V	L1	1-408-417-21	e	47uH
C31	1-135-160-21		CERAMIC CHIP 33PF 5% 50V	L2	1-408-417-21		47uH
C32	1-163-105-00	8	CERAMIC CHIF 33FF 370 30V	L3	1-410-703-21		CHIP 6.8uH
C33	1-163-105-00		CERAMIC CHIP 33PF 5% 50V	, 23	1 110 100 41	•	
C35	1-163-038-00	-	CERAMIC CHIP 0.1MF 25V	O1	8-729-216-22	S	TRANSISTOR 2SA 1162
C36	1-163-038-00		CERAMIC CHIP 0.1MF 25V	Ò2	8-729-101-25	S	TRANSISTOR 2SC1009A
C38	1-163-038-00		CERAMIC CHIP 0.1MF 25V	Q1 Q2 Q3	8-729-101-25	S	TRANSISTOR 2SC1009A
C39	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	Õ4	8-729-162-44	S	TRANSISTOR 2SB624-BV4
037	1 105 050 00	-		Q4 Q5	8-729-162-44	S	TRANSISTOR 2SB624-BV4
C41	1-163-038-00	s	CERAMIC CHIP 0.1MF 25V				
C45	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	Q6	8-729-162-44	S	TRANSISTOR 2SB624-BV4
C46	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V				
C49	1-135-148-21	S	TANTALUM CHIP 1.5MF 10% 16V	R11	1-216-640-11	S	METAL CHIP 360 0.50% 1/10W
C51	1-135-148-21	S	TANTALUM CHIP 1.5MF 10% 16V	R15	1-216-640-11	S	METAL CHIP 360 0.50% 1/10W
				R32	1-216-304-11		METAL 3.3 5% 1/10W
C52	1-135-161-21	S	TANTALUM CHIP 22MF 10% 10V	R33	1-216-304-11		METAL 3.3 5% 1/10W
C53	1-135-148-21	S	TANTALUM CHIP 1.5MF 10% 16V	R34	1-216-304-11	S	METAL 3.3 5% 1/10W
C54	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	nos	1 01 (004 11	_	METAL 3.3 5% 1/10W
C55	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	R35	1-216-304-11	S	3 COM 1 C O C O C O C O C O C O C O C O C O C
C56	1-163-038-00	S	CERAMIC CHIP 0.1MF 25V	R36	1-216-304-11	S	METAL CHIP 33K 0.50% 1/10W
			GOLD MOROD, ACD MALE D	R37	1-216-687-11		
CN1	1-566-572-11		CONNECTOR, 25P, MALE	R38	1-216-687-11	S	2 mm - 2 creek AGE A 5000 1/1000
CN2	1-506-470-21		CONNECTOR, 5P, MALE	R39	1-216-687-11	S	WE TAL CHIP 33K 0.30 % 1/10 W
CN3	1-506-468-11		CONNECTOR, 3P, MALE	D40	1 216 604 11		METAL CHIP 24K 0.50% 1/10W
CN4	1-506-475-11		CONNECTOR, 10P, MALE	R40	1-216-684-11		
CN5	1-563-238-11	O,	CONNECTOR, 15P, FEMALE	R41	1-216-684-11 1-216-684-11	8	METAL CHIP 24K 0.50% 1/10W
CNTC.	1 5/0 /50 01		ር/(NINTE/(TYOE) ከ/(A DE) TYO DO ADE) ይወ	R55 R58	1-216-684-11	5	METAL CHIP 510 0.50% 1/10W
CN6	1-563-678-21	0	CONNECTOR, BOARD TO BOARD 5P	R59	1-216-644-11	9	METAL CHIP 510 0.50% 1/10W
CN7	1-563-691-21		CONNECTOR, BOARD TO BOARD 18P	KJY	1-410-044-11	2	HILIAL CHI 510 0.50 10 11 10 11
CN8	1-506-468-11	0	CONNECTOR, 3P, MALE	R60	1-216-637-11	ę	METAL CHIP 270 0.50% 1/10W
				100	1 220 031-11		
				RV1	1-237-038-11	S	METAL 50K

(TG-51P BOARD)

TG-91P BOARD (for BVP-70ISP)

(TG-91P BOARD (for BVP-70ISP))

Ser. No. 41263-	BVP-70ISP	Ser. No. 41263-	BVP-70ISP
Ref. No. or Q'ty Part No.	SP Description	Ref. No. or Q'ty Part No. SP	Description
2pcs 1-590-027-11		D3 8-719-914-12 s	DIODE HSM88AS DIODE HZ4BLL DIODE HZ4BLL
C1 1-135-216-11 C2 1-163-227-11 C3 1-163-141-00	S CERAMIC CHIP 10PF 5% 50V S CERAMIC CHIP 0.001MF 5% 50V	D5 8-719-914-12 s	DIODE HZ4BLL DIODE HSM88AS-TL
C4 1-135-216-11 C5 1-163-038-00		DL1 1-415-776-11 s	DELAY LINE
C7 1-163-038-00 C9 1-163-038-00 C10 1-163-038-00 C11 1-163-141-00 C12 1-163-038-00	S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 0.001MF 5% 50V	IC2 8-759-148-39 s IC4 8-759-234-20 s IC6 8-759-234-20 s	IC CXD8002 IC CXD8095Q IC TC7S08F IC TC7S08F IC MC14023BF
C14 1-163-086-00 C15 1-163-141-00 C16 1-163-141-00 C17 1-163-038-00 C18 1-135-161-21	S CERAMIC CHIP 0.001MF 5% 50V S CERAMIC CHIP 0.001MF 5% 50V S CERAMIC CHIP 0.1MF 25V	IC11 8-759-231-30 s IC12 8-759-231-30 s IC13 8-759-231-30 s	IC TC4S30F IC TC4S30F IC TC4S30F IC TC4S30F IC MC14066BF
C19 1-135-161-21 C20 1-163-038-00 C21 1-135-161-21 C22 1-163-038-00 C23 1-135-166-21	s CERAMIC CHIP 0.1MF 25V s TANTALUM CHIP 22MF 10% 10V s CERAMIC CHIP 0.1MF 25V	IC19 8-759-929-21 s	IC TC4S30F IC TC4S30F
C25 1-135-160-21 C26 1-135-161-21 C27 1-135-161-21 C28 1-135-161-21 C29 1-135-160-21	s TANTALUM CHIP 22MF 10% 10V s TANTALUM CHIP 22MF 10% 10V s TANTALUM CHIP 22MF 10% 10V	IC22 8-759-231-30 s IC23 8-759-985-18 s IC24 8-759-234-20 s	IC TC7S08F IC TC4S30F IC 74ACO8SJ IC TC7S08F
C30 1-135-160-21 C31 1-135-160-21 C32 1-135-159-21	s TANTALUM CHIP 15MF 10% 16V	L1 1-408-417-21 s L2 1-408-417-21 s L3 1-410-703-21 s	INDUCTOR 47UH INDUCTOR CHIP 6.8UH
C35 1-163-038-00 C36 1-163-038-00	s CERAMIC CHIP 0.1MF 25V s CERAMIC CHIP 0.1MF 25V	Q1 8-729-216-22 s Q2 8-729-101-25 s Q3 8-729-101-25 s	TRANSISTOR 2SC1009A-FA4 TRANSISTOR 2SC1009A-FA4
C38 1-163-038-00 C39 1-163-235-00 C40 1-163-227-11	s CERAMIC CHIP 22PF 5% 50V s CERAMIC CHIP 10PF 5% 50V	Q4 8-729-141-48 s Q5 8-729-141-48 s	TRANSISTOR 2SB624-BV345
C41 1-163-038-00 C45 1-163-038-00	s CERAMIC CHIP 0.1MF 25V	Q6 8-729-141-48 s R11 1-216-640-11 s	SEE 1 CIVID 260 0 50 0 1 11 0 VI
C46 1-163-038-0C C49 1-135-148-21 C51 1-135-148-21 C52 1-135-161-21 C53 1-135-148-21	S TANTALUM CHIP 1.5MF 10% 16V S TANTALUM CHIP 1.5MF 10% 16V S TANTALUM CHIP 22MF 10% 10V	R15 1-216-640-11 s R37 1-216-687-11 s R38 1-216-687-11 s R39 1-216-687-11 s	METAL CHIP 360 0.50% 1/10W METAL CHIP 33K 0.50% 1/10W METAL CHIP 33K 0.50% 1/10W METAL CHIP 33K 0.50% 1/10W
C55 1-163-038-00 C56 1-163-038-00	S CERAMIC CHIP 0.1MF 25V	R41 1-216-684-11 s	METAL CHIP 24K 0.50% 1/10W METAL CHIP 24K 0.50% 1/10W METAL CHIP 24K 0.50% 1/10W
CN1 1-566-572-11 CN2 1-506-470-2 CN3 1-506-468-11 CN4 1-506-475-11 CN5 1-563-238-11	1 0 CONNECTOR, 5P, MALE 1 0 CONNECTOR, 3P, MALE 1 0 CONNECTOR, 10P, MALE	RV1 1-237-038-11 s	RES, ADJ, CERMET 50K
CN6 1-563-678-2 CN7 1-563-691-2 CN8 1-506-468-1	1 o CONNECTOR, BOARD TO BOARD 18P	· •	
CP1 1-567-550-1	1 s OSCILLATOR, CRYSTAL 28MHz		

VA-85 E	OARD			(VA-85 I	BOARD)		
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
lpc lpc	A-7513-991-A 3-711-775-01	0	MOUNTED CIRCUIT BOARD, VA-85 LEVER, PULL	C65 C66 C67	1-163-113-00 1-163-123-00 1-126-151-11	S S	CERAMIC CHIP 68PF 5% 50V CERAMIC CHIP 180PF 5% 50V ELECT 4.7uF 20% 16V
C1 C2 C3	1-163-038-00 1-163-125-00 1-163-100-00	s s	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 220PF 5% 50V CERAMIC CHIP 20PF 5% 50V	C68 C70	1-163-093-00 1-163-038-00	S	CERAMIC CHIP 10PF 5% 50V CERAMIC CHIP 0.1MF 25V
C4 C5	1-163-085-00 1-135-159-21	S		C72 C74 C75	1-164-232-11 1-135-164-21 1-135-156-21	s s	CERAMIC CHIP 0.01MF 20% 100V TANTALUM CHIP 22uF 20% 10V TANTALUM CHIP 6.8uF 10% 6.3V
C6 C7 C8	1-163-085-00 1-135-159-21 1-163-084-00	s s	CERAMIC CHIP 2PF 0.25PF 50V TANTALUM CHIP 10MF 20% 16V CERAMIC CHIP 1.5PF 0.25PF 50V	C76 C77 C78	1-135-125-21 1-163-038-00 1-126-163-11	8	TANTALUM CHIP 33MF 20% 10V CERAMIC CHIP 0.1MF 25V ELECT 4.7MF 20% 50V
C9 C10	1-135-164-21 1-124-269-11		TANTALUM CHIP 22uF 20% 10V ELECT, NONPOLAR 0.33uF 20% 50V TANTALUM CHIP 22uF 20% 10V	C82 C83 C84	1-126-160-11 1-130-471-00 1-126-160-11	S S	ELECT 1MF 20% 50V MYLAR 0.001uF 5% 50V ELECT 1MF 20% 50V
C11 C12 C13 C14	1-135-164-21 1-163-038-00 1-135-073-00 1-126-151-11	S	CERAMIC CHIP 0.1MF 25V TANTALUM CHIP 0.33uF 10% 35V ELECT 4.7uF 20% 16V	C85	1-163-038-00 1-130-483-00	s	CERAMIC CHIP 0.1MF 25V MYLAR 0.01MF 5% 50V
C14 C15	1-163-101-00 1-163-113-00	S		C89 C91 C93	1-163-125-00 1-163-101-00 1-163-101-00	S S	CERAMIC CHIP 220PF 5% 50V CERAMIC CHIP 22PF 5% 50V CERAMIC CHIP 22PF 5% 50V
C17 C19 C20	1-163-123-00 1-164-232-11 1-163-038-00	s s s	CERAMIC CHIP 180PF 5% 50V CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 0.1MF 25V	C95 C100	1-163-101-00 1-135-125-21	S	CERAMIC CHIP 22PF 5% 50V TANTALUM CHIP 33MF 20% 10V
C22 C25	1-135-156-21 1-163-038-00	s	TANTALUM CHIP 6.8uF 10% 6.3V CERAMIC CHIP 0.1MF 25V	C102 C103 C104	1-163-038-00 1-163-038-00 1-163-038-00	S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V
C26 C27 C28 C29	1-163-038-00 1-163-129-00 1-163-100-00 1-135-159-21	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 330PF 5% 50V CERAMIC CHIP 20PF 5% 50V TANTALUM CHIP 10MF 20% 16V	C105	1-161-039-00 1-163-141-00	S	CERAMIC 0.001MF 10% 25V (BVP-70P) CERAMIC CHIP 0.001MF 5% 50V (BVP-70ISP)
C30 C31 C32	1-163-085-00 1-135-159-21 1-163-084-00	S	CERAMIC CHIP 2PF 0.25PF 50V TANTALUM CHIP 10MF 20% 16V CERAMIC CHIP 1.5PF 0.25PF 50V	C106 C107	1-163-038-00 1-161-039-00 1-163-141-00	S S	CERAMIC CHIP 0.1MF 25V CERAMIC 0.001MF 10% 25V (BVP-70P) CERAMIC CHIP 0.001MF 5% 50V (BVP-70ISP)
C33 C35	1-163-085-00 1-124-269-11	S	CERAMIC CHIP 2PF 0.25PF 50V ELECT, NONPOLAR 0.33uF 20% 50V	C108 C109	1-163-038-00 1-161-039-00 1-163-141-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC 0.001MF 10% 25V (BVP-70P) CERAMIC CHIP 0.001MF 5% 50V (BVP-70ISP)
C36 C37 C38 C39	1-135-164-21 1-163-038-00 1-135-073-00 1-126-151-11	S S	CERAMIC CHIP 0.1MF 25V	C110 C111	1-163-038-00 1-163-038-00		CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V
C40 C41	1-163-101-00 1-163-113-00	s	CERAMIC CHIP 22PF 5% 50V CERAMIC CHIP 68PF 5% 50V	C112 C113 C114	1-163-038-00 1-163-038-00 1-130-491-00	S S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V MYLAR 0.047MF 5% 50V
C42 C44 C45	1-163-123-00 1-164-232-11 1-163-038-00	S S	CERAMIC CHIP 180PF 5% 50V CERAMIC CHIP 0.01MF 20% 100V CERAMIC CHIP 0.1MF 25V	C115	1-163-038-00 1-163-038-00	s	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V
C47 C48	1-135-164-21	, s	TANTALUM CHIP 6.8uF 10% 6.3V	C118 C119 C120 C121	1-135-168-21 1-163-038-00 1-163-038-00 1-135-076-21	s s	TANTALUM CHIP 100uF 10% 4V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V TANTALUM CHIP 1MF 10% 35V
C50 C51 C52 C53	1-163-038-00 1-163-038-00 1-163-125-00 1-163-100-00	S	CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 220PF 5% 50V	CN1	1-506-730-11		CONNECTOR, 40P, MALE
C54 C55 C56	1-135-159-21 1-163-085-00 1-135-159-21	S	TANTALUM CHIP 10MF 20% 16V CERAMIC CHIP 2PF 0.25PF 50V	CV1 CV2 CV3	1-141-370-11 1-141-370-11 1-141-370-11	s	CAP, CHIP TRIMMER 50PF CAP, CHIP TRIMMER 50PF CAP, CHIP TRIMMER 50PF
C57 C58	1-163-086-00 1-163-085-00	s S	CERAMIC CHIP 3PF 0.25PF 50V CERAMIC CHIP 2PF 0.25PF 50V	D1 D3 D4	8-719-948-47 8-719-100-03 8-719-910-61	S S	DIODE HSM88AS DIODE 1S2835 DIODE HZ6A1L
C59 C60 C61	1-135-164-21 1-124-269-11 1-135-164-21	. S	TANTALUM CHIP 22uF 20% 10V	D5 D7	8-719-948-47 8-719-100-03	S	DIODE HSM88AS DIODE 182835
C62 C63	1-135-073-00 1-163-038-00) s	CERAMIC CHIP 0.1MF 25V	D8 D10 D12 D13	8-719-910-61 8-719-948-47 8-719-100-03 8-719-910-61	S S	DIODE HZ6A1L DIODE HSM88AS DIODE 1S2835 DIODE HZ6A1L
C64	1-163-101-00	S	CERAMIC CHIP 22PF 5% 50V	נוע	0-117-710-01	3	DIODEIRORIE

(VA-85 B	BOARD)	(VA-85 BOARD)		
Ref. No.	Part No. SP Description	Ref. No. or Q'ty Part No. SP Description	escription	
D14 D16	8-719-800-76 s DIODE 1SS123 8-719-800-76 s DIODE 1SS123	Q31 8-729-216-22 s TRANSISTOR 2SA1162 Q32 8-729-216-22 s TRANSISTOR 2SA1162 Q33 8-729-216-22 s TRANSISTOR 2SA1162	RANSISTOR 2SA1162	
DL1	1-415-184-31 s DELAY LINE 50nS	Q34 8-729-216-22 s TRANSISTOR 2SA1162 Q38 8-729-100-66 s TRANSISTOR 2SC1623	RANSISTOR 2SA1162	
FL1 FL2 FL3	1-409-427-11 s FILTER, TRAP 14.3MHz 1-409-427-11 s FILTER, TRAP 14.3MHz 1-409-427-11 s FILTER, TRAP 14.3MHz	Q39 8-729-122-63 s TRANSISTOR 2SA1226 Q40 8-729-100-66 s TRANSISTOR 2SC1623 Q41 8-729-122-63 s TRANSISTOR 2SA1226	RANSISTOR 2SC1623 RANSISTOR 2SA1226	
IC1 IC2 IC3 IC4 IC5	8-741-158-80 s IC SBX1588-01 8-759-988-42 s IC AD707JR 8-759-011-65 s IC MC74HC4053F 8-759-208-06 s IC TC4051BPHB	Q43 8-729-100-66 s TRANSISTOR 2SC1623 Q44 8-729-216-22 s TRANSISTOR 2SA1162 Q45 8-729-109-44 s TRANSISTOR 2SK94 TRANSISTOR 2SK94	RANSISTOR 2SC1623 RANSISTOR 2SA1162 RANSISTOR 2SK94	
IC6 IC7 IC8 IC9 IC10	8-741-158-80 s IC SBX1588-01 8-759-988-42 s IC AD707JR 8-759-011-65 s IC MC74HC4053F 8-759-011-65 s IC MC74HC4053F 8-759-208-06 s IC TC4051BPHB	R1 1-216-646-11 s METAL CHIP 620 0.50% 1/10W R3 1-216-657-11 s METAL CHIP 1.8K 0.5% 1/10W R6 1-216-643-11 s METAL CHIP 470 0.50% 1/10W R9 1-216-651-11 s METAL CHIP 1K 0.50% 1/10W R10 1-216-689-11 s METAL CHIP 39K 0.50% 1/10W	ETAL CHIP 620 0.50% 1/10W ETAL CHIP 1.8K 0.5% 1/10W ETAL CHIP 470 0.50% 1/10W ETAL CHIP 1K 0.50% 1/10W	
IC12 IC13 IC14 IC15 IC16	8-741-158-80 s IC SBX1588-01 8-759-988-42 s IC AD707JR 8-759-011-65 s IC MC74HC4053F 8-759-208-06 s IC TC4051BPHB 8-759-908-92 s IC TL084CNS	R13 1-216-639-11 s METAL CHIP 330 0.50% 1/10W R15 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W R16 1-216-626-11 s METAL CHIP 91 0.50% 1/10W R18 1-216-661-11 s METAL CHIP 9.7K 0.50% 1/10W	TETAL CHIP 3.3K 0.50% 1/10W TETAL CHIP 91 0.50% 1/10W TETAL CHIP 2.7K 0.50% 1/10W	
IC17 IC18 IC19 IC20 IC21	8-759-987-41 s IC SN74HC4066NS 8-759-208-11 s IC TC4053BFHB 8-759-208-11 s IC TC4053BFHB 8-759-906-54 s IC TL064CNS 8-759-208-11 s IC TC4053BFHB	R22 1-216-643-11 s METAL CHIP 470 0.50% 1/10W R23 1-216-633-11 s METAL CHIP 180 0.50% 1/10W R29 1-216-631-11 s METAL CHIP 150 0.50% 1/10W R30 1-216-631-11 s METAL CHIP 150 0.50% 1/10W R32 1-216-052-00 s METAL CHIP 1.3K 5% 1/10W	METAL CHIP 180 0.50% 1/10W METAL CHIP 150 0.50% 1/10W METAL CHIP 150 0.50% 1/10W	
IC22 IC23 IC24 IC25 IC26	8-759-906-54 s IC TL064CNS 8-759-908-17 s IC TL082CPS 8-759-011-65 s IC MC74HC4053F 8-759-925-74 s IC SN74HC04NS 8-759-911-04 s IC TL068CLP	R34 1-216-669-11 s METAL CHIP 5.6K 0.50% 1/10W R35 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W R36 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W R38 1-216-667-11 s METAL CHIP 4.7K 0.50% 1/10W R41 1-216-647-11 s METAL CHIP 680 0.50% 1/10W	METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 4.7K 0.50% 1/10W	
Q1 Q2 Q3 Q4 Q5	8-729-216-22 s TRANSISTOR 2SA1162 8-729-100-66 s TRANSISTOR 2SC1623 8-729-122-63 s TRANSISTOR 2SA1226 8-729-100-66 s TRANSISTOR 2SA1226 8-729-100-66 s TRANSISTOR 2SC1623	R43 1-216-699-11 s METAL CHIP 100K 0.50% 1/10W R46 1-216-647-11 s METAL CHIP 680 0.50% 1/10W R47 1-216-655-11 s METAL CHIP 1.5K 0.50% 1/10W R50 1-216-646-11 s METAL CHIP 620 0.50% 1/10W R54 1-216-651-11 s METAL CHIP 1K 0.50% 1/10W	METAL CHIP 680 0.50% 1/10W METAL CHIP 1.5K 0.50% 1/10W METAL CHIP 620 0.50% 1/10W	
Q7 Q8 Q9 Q10 Q11	8-729-122-63 s TRANSISTOR 2SA1226 8-729-175-73 s TRANSISTOR 2SC2757 8-729-100-66 s TRANSISTOR 2SC2757 8-729-216-22 s TRANSISTOR 2SC1623 8-729-216-22 s TRANSISTOR 2SA1162	R55 1-216-689-11 s METAL CHIP 39K 0.50% 1/10W R58 1-216-639-11 s METAL CHIP 330 0.50% 1/10W R59 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W R61 1-216-626-11 s METAL CHIP 91 0.50% 1/10W R63 1-216-661-11 s METAL CHIP 2.7K 0.50% 1/10W	METAL CHIP 330 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 91 0.50% 1/10W	
Q12 Q13 Q14 Q15 Q17	8-729-100-66 s TRANSISTOR 2SC1623 8-729-122-63 s TRANSISTOR 2SA1226 8-729-122-63 s TRANSISTOR 2SA1226 8-729-100-66 s TRANSISTOR 2SC1623 8-729-122-63 s TRANSISTOR 2SA1226	R68 1-216-655-11 s METAL CHIP 1.5K 0.50% 1/10W R69 1-216-643-11 s METAL CHIP 470 0.50% 1/10W R70 1-216-633-11 s METAL CHIP 180 0.50% 1/10W R74 1-216-631-11 s METAL CHIP 150 0.50% 1/10W R75 1-216-631-11 s METAL CHIP 150 0.50% 1/10W	METAL CHIP 470 0.50% 1/10W METAL CHIP 180 0.50% 1/10W METAL CHIP 150 0.50% 1/10W	•
Q18 Q19 Q20 Q21 Q22	8-729-175-73 s TRANSISTOR 2SC2757 8-729-175-73 s TRANSISTOR 2SC2757 8-729-216-22 s TRANSISTOR 2SA1162 8-729-100-66 s TRANSISTOR 2SC1623 8-729-122-63 s TRANSISTOR 2SA1226	R77 1-216-052-00 s METAL CHIP 1.3K 5% 1/10W R79 1-216-669-11 s METAL CHIP 5.6K 0.50% 1/10W R80 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W R81 1-216-663-11 s METAL CHIP 3.3K 0.50% 1/10W R83 1-216-667-11 s METAL CHIP 4.7K 0.50% 1/10W	METAL CHIP 5.6K 0.50% 1/10V METAL CHIP 3.3K 0.50% 1/10V METAL CHIP 3.3K 0.50% 1/10V	V V
Q23 Q24 Q25 Q27 Q28	8-729-122-63 s TRANSISTOR 2SA1226 8-729-100-66 s TRANSISTOR 2SC1623 8-729-122-63 s TRANSISTOR 2SC1623 8-729-175-73 s TRANSISTOR 2SA1226 8-729-175-73 s TRANSISTOR 2SC2757	R86 1-216-647-11 s METAL CHIP 680 0.50% 1/10W R88 1-216-649-11 s METAL CHIP 820 0.50% 1/10W R89 1-216-657-11 s METAL CHIP 1.8K 0.5% 1/10W R91 1-216-668-11 s METAL CHIP 5.1K 0.50% 1/10V R92 1-216-653-11 s METAL CHIP 1.2K 0.50% 1/10V	METAL CHIP 820 0.50% 1/10W METAL CHIP 1.8K 0.5% 1/10W METAL CHIP 5.1K 0.50% 1/10V	V
Q29 Q30	8-729-175-73 s TRANSISTOR 2SC2757 8-729-216-22 s TRANSISTOR 2SA1162	R94 1-216-646-11 s METAL CHIP 620 0.50% 1/10W		

(VA-85 BOARD)

Ref. No. or Q'ty	Part No.	QD.	Description
R98 R99 R102 R105 R109	1-216-651-11 1-216-689-11 1-216-639-11 1-216-639-11 1-216-639-11	S S S S	METAL CHIP 1K 0.50% 1/10W METAL CHIP 39K 0.50% 1/10W METAL CHIP 330 0.50% 1/10W METAL CHIP 330 0.50% 1/10W METAL CHIP 330 0.50% 1/10W
R110 R111 R112 R114 R118	1-216-663-11 1-216-651-11 1-216-626-11 1-216-661-11 1-216-655-11	\$ \$ \$ \$	METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 1K 0.50% 1/10W METAL CHIP 91 0.50% 1/10W METAL CHIP 2.7K 0.50% 1/10W METAL CHIP 1.5K 0.50% 1/10W
R119 R120 R127 R128 R130	1-216-643-11 1-216-633-11 1-216-631-11 1-216-631-11 1-216-052-00	\$ \$ \$ \$ \$	METAL CHIP 470 0.50% 1/10W METAL CHIP 180 0.50% 1/10W METAL CHIP 150 0.50% 1/10W METAL CHIP 150 0.50% 1/10W METAL CHIP 1.3K 5% 1/10W
R134 R135 R136 R139 R144	1-216-667-11 1-216-663-11 1-216-663-11 1-216-647-11 1-216-679-11	\$ \$ \$ \$ \$	METAL CHIP 4.7K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 3.3K 0.50% 1/10W METAL CHIP 680 0.50% 1/10W METAL CHIP 15K 0.50% 1/10W
R150 R157 R178 R201 R227	1-216-679-11 1-216-679-11 1-216-699-11 1-215-482-00 1-216-092-00	\$ \$ \$ \$	METAL CHIP 15K 0.50% 1/10W METAL CHIP 15K 0.50% 1/10W METAL CHIP 100K 0.50% 1/10W METAL 360K 1% 1/6W METAL CHIP 62K 5% 1/10W
R229 R230 R241 R242 R246	1-216-699-11 1-216-699-11 1-216-034-00 1-247-883-00 1-216-034-00	\$ \$ \$ \$ \$	METAL CHIP 100K 0.50% 1/10W METAL CHIP 100K 0.50% 1/10W METAL 240 5% 1/10W CARBON (SMALL) 150K 5% 1/4W METAL 240 5% 1/10W
R247	1-247-882-11	s	CARBON (SMALL) 130K 5% 1/4W (BVP-70P)
R253 R254	1-216-100-00 1-216-034-00 1-247-882-11	S S	CHIP 130K 5% 1/10W (BVP-70ISP) METAL 240 5% 1/10W CARBON (SMALL) 130K 5% 1/4W (BVP-70P)
R266 R267	1-216-100-00 1-215-493-00 1-215-493-00	S S S	CHIP 130K 5% 1/10W (BVP-70ISP) METAL 1M 1% 1/6W METAL 1M 1% 1/6W
R268	1-215-491-00	s	METAL 820K 1% 1/6W
RV1 RV4 RV5 RV6 RV7	1-228-471-00 1-228-458-00 1-228-459-00 1-228-471-00 1-228-474-00	\$ \$ \$ \$	METAL 1K METAL 5K METAL 10K METAL 1K METAL 10K
RV8 RV10 RV11 RV12 RV13	1-228-474-00 1-228-458-00 1-228-459-00 1-228-471-00 1-228-474-00	\$ \$ \$ \$	METAL 10K METAL 5K METAL 10K METAL 1K METAL 10K
RV16 RV17 RV18 RV19 RV20	1-228-458-00 1-228-459-00 1-228-475-00 1-228-460-00 1-228-475-00	S S S S	METAL 5K METAL 10K METAL 20K METAL 20K METAL 20K
RV21 RV22 RV23 RV24 RV25	1-228-460-00 1-228-475-00 1-228-460-00 1-228-462-00 1-228-462-00	S S S	METAL 20K METAL 20K METAL 20K METAL 100K METAL 100K

Ref. No. or Q'ty	Part No.	SP	Description
RV26	1-228-462-00	S	METAL 100K
RV27	1-228-462-00	S	
RV28	1-228-462-00	S	METAL 100K
RV29	1-228-462-00	S	
RV30	1-228-462-00	S	METAL 100K
RV31	1-228-462-00	S	METAL 100K
RV32	1-228-462-00	S	METAL 100K
RV33	1-228-462-00	S	
RV34	1-228-462-00	S	METAL 100K
RV35	1-228-462-00	S	METAL 100K
RV36	1-228-462-00	S	METAL 100K
RV37 RV38	1-228-462-00	S	METAL 100K
RV38	1-228-462-00	S	METAL 100K
RV39	1-228-462-00	S	METAL 100K
RV40	1-228-462-00	S	METAL 100K
RV41	1-228-462-00	S	METAL 100K
RV42	1-228-462-00	S	
RV43	1-228-462-00	S	METAL 100K
RV44	1-228-462-00	S	METAL 100K
) (CCC) 1 1 1 1 1 1 1 1 1
RV50	1-228-456-00	S	METAL 1K
RV51	1-228-456-00	S	METAL 1K
RV52		S	METAL 1K
RV53		S	METAL 5K
RV54	1-228-458-00	8	METAL 5K
RV55	1-228-458-00	s	METAL 5K
			ar 100
S1	1-570-857-11	S	
S2	1-570-610-11	S	
S3	1-572-446-21	S	
S4	1-570-857-11	S	SLIDE

VF-41 B	OARD		(VF-41 B	OARD)		
Ref. No. or Q'ty	Part No. SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
lpc		MOUNTED CIRCUIT BOARD, VF-41	D7 D8	8-719-104-31 8-719-104-31	S	DIODE 1S2838 DIODE 1S2838
C1 C2 C4	1-135-159-21 s 1-135-125-21 s 1-135-155-21 s	TANTALUM CHIP 10uF 20% 16V TANTALUM CHIP 33uF 20% 10V TANTALUM CHIP 4.7uF 20% 10V	D9 D10 D11	8-719-800-76 8-719-800-76 8-719-104-31	S	DIODE 1SS226 DIODE 1SS226 DIODE 1S2838
C6 C7	1-163-125-00 s 1-163-038-00 s	CERAMIC CHIP 0.1MF 25V	D12 D13	8-719-910-75 8-719-104-34	s s	DIODE HZ7B2L DIODE 1S2836
C8 C10	1-163-115-00 s 1-163-021-00 s	CERAMIC CHIP 0.01MF 10% 50V	DL1	1-415-487-11		DELAY LINE 140nS
C11 C12 C15		CERAMIC CHIP 0.1MF 25V FILM 0.0027uF 5% 100V	IC1 IC2 IC3	8-759-300-28 8-759-100-94 8-759-209-57	S	IC HA11423MP IC UPC358G2 IC TC4S69F IC TC4S01F
C16 C17 C18 C19	1-163-038-00 s 1-163-021-00 s 1-163-038-00 s	FILM 0.0047uF 5% 100V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.01MF 10% 50V CERAMIC CHIP 0.1MF 25V	IC4 L2 L3	8-759-209-54 1-459-899-11 1-410-716-31		COIL, HORIZONTAL LINEARITY INDUCTOR CHIP 82uH
C20	1-163-038-00 s	CERAMIC CHIP 0.1MF 25V CERAMIC 470PF 10% 1KV	Q1 Q2	8-729-175-72 8-729-175-72	s s	TRANSISTOR 2SC2757
C21 C22 C23 C25	1-126-233-11 s 1-163-833-00 s 1-135-159-21 s	ELECT 22uF 20% 35V CERAMIC CHIP 0.068uF 25V TANTALUM CHIP 10uF 20% 16V TANTALUM CHIP 1uF 10% 35V	Q1 Q2 Q3 Q4 Q5	8-729-175-72 8-729-175-72 8-729-100-66	S	TRANSISTOR 2SC2757 TRANSISTOR 2SC2757 TRANSISTOR 2SC1623
C26 C27 C28 C29	1-135-159-21 1-163-038-00 1-163-038-00	TANTALUM CHIP 10aF 20% 16V CERAMIC CHIP 0.1MF 25V CERAMIC CHIP 0.1MF 25V	Q6 Q7 Q8 Q9 Q10	8-729-105-37 8-729-100-66 8-729-119-00 8-729-119-00 8-729-105-37	S S	TRANSISTOR 2SK612
C30 C31		s TANTALUM CHIP 10uF 20% 16V s TANTALUM CHIP 1uF 20% 16V	Q11	8-729-100-66 8-729-216-22	S	TRANSISTOR 2SC1623
C32 C33 C34 C35	1-135-159-21 1-135-159-21 1-136-287-11	S CERAMIC CHIP 0.0068MF 10% 50V S TANTALUM CHIP 10uF 20% 16V S TANTALUM CHIP 10uF 20% 16V S FILM 0.0047uF 5% 100V 25V S CERAMIC CHIP 0.1MF 25V	Q12 Q13 Q14 Q15	8-729-210-22 8-729-175-72 8-729-100-66 8-729-216-22		TRANSISTOR 2SC2757 TRANSISTOR 2SC1623 TRANSISTOR 2SA1162
C36 C37 C38	1-163-037-11 1-135-076-21	S CERAMIC CHIP 0.022uF 10% 25V S TANTALUM CHIP 1uF 10% 35V S TANTALUM CHIP 1uF 10% 35V	Q16 Q17 Q18	8-729-162-43 8-729-109-44 8-729-216-22	1 :	TRANSISTOR 2SB624-BV3 TRANSISTOR 2SK94 TRANSISTOR 2SA1162
C39 C40 C41	1-163-017-00 1-135-159-21	s CERAMIC CHIP 0.0047MF 10% 50V s TANTALUM CHIP 10uF 20% 16V	R3 R4 R5 R6	1-216-687-1 1-216-683-1 1-216-644-1 1-216-644-1	l l	METAL CHIP 33K 0.50% 1/10W METAL CHIP 22K 0.50% 1/10W METAL CHIP 510 0.50% 1/10W METAL CHIP 510 0.50% 1/10W METAL CHIP 510 0.50% 1/10W
C42 C43 C44	1-163-038-00 1-163-133-00	s TANTALUM CHIP 3.3uF 20% 16V s CERAMIC CHIP 0.1MF 25V s CERAMIC CHIP 470PF 5% 50V s TANTALUM CHIP 10uF 20% 16V	R8 R10	1-216-644-1 1-216-657-1	I 1	METAL CHIP 510 0.50% 1/10W METAL CHIP 1.8K 0.5% 1/10W
C45 C46	1-135-159-21 1-126-176-11	s ELECT 220uF 20% 10V s ELECT 100uF 20% 16V	R11 R12 R14	1-216-689-1 1-216-683-1 1-216-637-1	1	s METAL CHIP 39K 0.50% 1/10W s METAL CHIP 22K 0.50% 1/10W s METAL CHIP 270 0.50% 1/10W
C47 C48 C49 C50	1-124-455-00 1-163-038-00 1-163-109-00 1-163-125-00	S CERAMIC CHIP 0.1MF 25V S CERAMIC CHIP 47PF 5% 50V S CERAMIC CHIP 220PF 5% 50V S CERAMIC CHIP 0.0056uF 10% 50V	R15 R16 R17	1-216-671-1 1-216-639-1 1-216-644-1	1	s METAL CHIP 6.8K 0.50% 1/10W s METAL CHIP 330 0.50% 1/10W s METAL CHIP 510 0.50% 1/10W
C51 C52	1-163-018-00 1-163-121-00	s CERAMIC CHIP 150PF 5% 50V	R19 R20	1-216-667-1 1-216-645-1 1-216-657-1	1	s METAL CHIP 4.7K 0.50% 1/10W s METAL CHIP 560 0.50% 1/10W s METAL CHIP 1.8K 0.5% 1/10W
CN1	1-566-395-11	O CONNECTOR, 10P, MALE O CONNECTOR 12P	R22 R23	1-216-673-	1	METAL CHIP 8.2K 0.50% 1/10W
CN2 CN4 CN5	1-566-391-11 1-506-470-11 1-506-470-11	o CONNECTOR, 5P, MALE o CONNECTOR, 5P, MALE	R25 R26 R27	1-216-683- 1-216-667- 1-216-667-	11 11	s METAL CHIP 22K 0.50% 1/10W s METAL CHIP 4.7K 0.50% 1/10W s METAL CHIP 4.7K 0.50% 1/10W s METAL CHIP 4.7K 0.50% 1/10W
CV1	1-141-370-11	s CAP, CHIP TRIMMER 50PF	R28	1-216-667-		METAL CHIP 91K 0.50% 1/10W
D1 D2 D3 D5 D6	8-719-914-11 8-719-800-76 8-719-900-95 8-719-901-19 8-719-900-95	s DIODE HZ4ALL s DIODE 1SS226 s DIODE V09G s DIODE V11N s DIODE V09G	R32 R43 R46 R79 R81	1-216-698- 1-216-669- 1-215-490- 1-216-681- 1-216-683-	11 00 11	s METAL CHIP 5.6K 0.50% 1/10W s METAL 750K 1% 1/6W s METAL CHIP 18K 0.50% 1/10W s METAL CHIP 22K 0.50% 1/10W

(VF-41 I	BOARD)			MAIN F	RAME		
Ref. No. or Q'ty	Part No.	SP	Description	Ref. No. or Q'ty	Part No.	SP	Description
R82	1-216-683-11		METAL CHIP 22K 0.50% 1/10W	1pc	1-466-158-13	s	CONVERTER UNIT, DC-DC
R85 R86	1-216-668-11 1-216-693-11		METAL CHIP 5.1K 0.50% 1/10W METAL CHIP 56K 0.50% 1/10W	1pc	1-547-360-11	0	FILTER UNIT, OPTICAL
R87 R91	1-216-659-11 1-216-627-11	S	METAL CHIP 2.2K 0.50% 1/10W METAL CHIP 100 0.50% 1/10W	1pc	1-937-212-21	0	HARNESS (VF)
R92	1-216-627-11 1-216-644-11	S	METAL CHIP 100 0.50% 1/10W METAL CHIP 510 0.50% 1/10W	1pc	1-937-218-11	0	HARNESS (LENS)
R93 R97	1-208-259-00		METAL 10M 10%	1pc	1-939-723-15	0	HARNESS(50P PC BOARD TYPE)
RV1	1-237-035-11	-	METAL 5K	1pc	8-759-947-34	s	IC LM35DZ
RV2 RV3 RV4	1-237-035-11 1-237-035-11 1-237-041-11	S S	METAL 5K METAL 5K METAL 500K	CN1F(to	CN-189 board) 1-562-743-11	o	HOUSING, 10P
RV5 RV6 RV7	1-237-035-11 1-237-031-11 1-237-032-11	S S	METAL 5K METAL 200 METAL 500	CN1F(to	DC-DC CONV 1-562-152-11 1-563-088-11	0	HOUSING, 7P CONTACT, FEMALE AWG24-30
RV8 RV9 T1	1-237-032-11 1-237-038-11 1-439-419-11	S	METAL 500 METAL 50K TRANSFORMER, FLYBACK	CN1F(to	PA-91 board) 1-562-151-11 1-563-088-11	0	HOUSING, 6P CONTACT, FEMALE AWG24-30
VDR1	1-806-497-00	S	THE PERSON WHAT GOVERNOON	CN1F(to	RG-20/20P boa 1-562-147-11 1-563-088-11	0	HOUSING, 2P CONTACT, FEMALE AWG24-30
VR-108	BOARD			CN1F(to	SW-116A board 1-562-150-11 1-563-088-11	0	HOUSING, 5P CONTACT, FEMALE AWG24-30
Ref. No. or Q'ty	Part No.	SP	Description	CN1F(to	SW-256 board) 1-562-150-11 1-563-088-11	0	HOUSING, 5P CONTACT, FEMALE AWG24-30
1pc	A-7520-476-A	0	MOUNTED CIRCUIT BOARD, VR-108	CNIOT/4-		Ü	CONTINUI, I LIMI LE III.
C7 C8	1-135-092-21 1-163-037-11		TANTALUM CHIP 3.3uF 20% 16V CERAMIC CHIP 0.022uF 10% 25V	CNZP(10	CN-304 board) 1-565-129-11 1-565-164-11	0	HOUSING, 10P CONTACT, FEMALE AWG26-32
CN23	1-506-485-11	o	CONNECTOR, 6P, MALE	CN2F(to	TG-51/51P boa 1-562-150-21	rd) o	HOUSING, 5P
IC1	8-759-801-06	S	IC LB1423N		1-563-088-11	0	CONTACT, FEMALE AWG24-30
Q1 Q2 Q3 O4	8-729-901-03 8-729-901-03 8-729-901-03 8-729-901-03	S S	TRANSISTOR DTC144WK TRANSISTOR DTC144WK TRANSISTOR DTC144WK TRANSISTOR DTC144WK	CN3F(to	AT-58 board) 1-562-151-11 1-563-088-11	0	HOUSING, 6P CONTACT, FEMALE AWG24-30
R15	1-216-691-11		METAL CHIP 47K 0.50% 1/10W	CN3F(to	DR-86 board) 1-562-154-11 1-563-088-11	0	HOUSING, 9P CONTACT, FEMALE AWG24-30
RV1 RV2 RV3 RV4	1-238-296-11 1-238-296-11 1-238-290-11 1-238-293-11	s s s	RES, VAR, CARBON 10K RES, VAR, CARBON 10K RES, VAR, CARBON 1K RES, VAR, CARBON 10K	CN3F(to	RG-20/20P boa 1-562-156-11 1-563-088-11	0	HOUSING, 11P CONTACT, FEMALE AWG24-30
RV5	1-228-473-00	S	RES, ADJ, METAL 5K	CN3F(to	TG-51/51P boa 1-562-148-11 1-563-088-11	0	HOUSING, 3P CONTACT, FEMALE AWG24-30
				CN3F(to	CN-304 board) 1-565-129-11 1-565-164-11	0	HOUSING, 10P CONTACT, FEMALE AWG26-32
				CN3F(to	PA-91 board) 1-562-147-11 1-563-088-11 1-562-735-11	0	HOUSING, CONNECTOR 2P CONTACT, FEMALE, AWG24-30 HOUSING, CONNECTOR 2P

(MAIN FRAME) (MAIN FRAME) Ref. No. Ref. No. or Q'ty Part No. SP Description or Q'ty Part No. SP Description CN15F(to HN-135 board) CN4F(to AT-58 board) 1-562-157-11 o HOUSING, 12P 1-563-088-11 o CONTACT, FEMALE AWG24-30 1-562-148-11 o HOUSING, 3P 1-563-088-11 CONTACT, FEMALE AWG24-30 CN16F(to HN-135 board) CN4F(to RG-20/20P board) 1-562-150-21 o HOUSING, 5P 1-563-088-11 o CONTACT, FEMALE AWG24-30 1-562-147-11 o HOUSING, 2P o CONTACT, FEMALE AWG24-30 1-563-088-11 CN17F(to HN-135 board) CN4F(to CN-304 board) 1-562-150-11 o HOUSING, 5P 1-563-088-11 o CONTACT, FEMALE AWG24-30 o HOUSING, 10P 1-565-129-11 o CONTACT, FEMALE AWG26-32 1-565-164-11 CN18F(to HN-135 board) 1-562-147-11 o HOUSING, 2P 1-563-088-11 o CONTACT, FEMALE AWG24-30 CN4F(to PA-91 board) HOUSING, CONNECTOR 2P
 CONTACT, FEMALE, AWG24-30 1-562-147-11 1-563-088-11 1-562-735-11 o HOUSING, CONNECTOR 2P CN20F(to HN-135 board) 1-563-124-11 o HOUSING, PS 20P 1-563-115-11 o CONTACT, FEMALE AWG24-28 CN4F(to TG-51/51P board) 1-562-155-11 o HOUSING, 10P 1-563-088-11 o CONTACT, FEMALE AWG24-30 CN21F(to HN-135 board) 1-562-627-11 o HOUSING, 13P 1-563-088-11 o CONTACT, FEMALE AWG24-30 CN5F(to CN-304 board) 1-565-129-11 o HOUSING, 10P 1-565-164-11 o CONTACT, FEMALE AWG26-32 CN22F(to HN-135 board) 1-562-151-11 o HOUSING, 6P 1-563-088-11 o CONTACT, FEMALE AWG24-30 CN5F(to PA-91 board) 1-562-147-11 1-563-088-11 HOUSING, CONNECTOR 2P
 CONTACT, FEMALE, AWG24-30 1-562-735-11 o HOUSING, CONNECTOR 2P CN23F(to HN-135 board) 1-562-149-11 o HOUSING, 4P 1-563-088-11 o CONTACT, FEMALE AWG24-30 CN6F(to CN-304 board) 1-565-129-11 o HOUSING, 10P CN24F(to HN-135 board) o CONTACT, FEMALE AWG26-32 1-565-164-11 1-562-148-11 o HOUSING, 3P 1-563-088-11 o CONTACT, FEMALE AWG24-30 CN7F(to CN-304 board) 1-565-129-11 o HOUSING, 10P 1-565-164-11 o CONTACT, FEMALE AWG26-32 CN27F(to HN-135 board) 1-563-123-11 o HOUSING, PS 18P 1-563-115-11 o CONTACT, FEMALE AWG24-28 CN8F(to HN-135 board) 1-563-120-11 o HOUSING, PS 12P o CONTACT, FEMALE AWG24-28 CN101 1-565-051-11 CONNECTOR, 20P FEMALE "VF" 1-563-115-11 CN102 1-562-221-21 s CONNECTOR, 12P FEMALE "LENS" CN103 1-562-261-21 o CONNECTOR, BNC "TEST OUT" CN8F(to TG-51/51P board) s CONNECTOR, 6P FEMALE "REMOTE" 1-562-148-11 o HOUSING, PS 3P 1-563-058-11 o CONTACT, FEMALE AWG24-28 CN105 1-561-233-21 CN110M 1-562-855-11 o HOUSING, IL 6P CN9F(to HN-135 board) 1-564-092-11 o CONTACT, MALE AWG22-28 o HOUSING, 11P 1-562-156-11 CN110F 1-561-518-00 o HOUSING, ILG 6P 1-563-088-11 o CONTACT, FEMALE AWG24-30 1-560-372-00 o CONTACT, FEMALE AWG22-28 CN10F(to HN-135 board) 1-562-148-11 o HOUSING, 3P 1-563-088-11 o CONTACT, FE RV101 1-223-165-00 s RES, ADJ, WIREWOUND o CONTACT, FEMALE AWG24-30 10K"PEDESTAL" CN11F(to HN-135 board) 1-562-149-11 o HOUSING, 4P 1-563-088-11 o CONTACT, FEMALE AWG24-30 CN12F(to HN-135 board) 1-562-150-11 o HOUSING, 5P 1-563-088-11 o CONTACT, FEMALE AWG24-30

1-562-155-11 o HOUSING, 10P 1-563-088-11 o CONTACT, FEMALE AWG24-30

1-562-149-11 o HOUSING, 4P 1-563-088-11 o CONTACT, FEMALE AWG24-30

CN13F(to HN-135 board)

CN14F(to HN-135 board)

VIEWFINDER FRAME

Ref. No.

or Q'ty Part No. SP Description

1-542-106-11 s MICROPHONE 1pc

1pc A 1-546-066-21 s 1.5" CRT ASSY

1-940-868-12 s HARNESS(VF CABLE)

CN1F(to LP-56 board)

1-565-121-11 o HOUSING, 2P 1-564-832-11 o CONTACT

CN1F(to SW-425 board)

1-563-871-11 o HOUSING, 6P 1-563-869-11 o CONTACT

CN1F(to VF-41 board) 1-563-873-11

o HOUSING, 10P o CONTACT

1-563-869-11

CN2F(to VF-41 board)

o HOUSING, 12P 1-563-874-11

1-563-869-11 o CONTACT, FEMALE

CN4F(to VF-41 board)

1-562-150-11 o HOUSING, 5P

1-564-026-21 o CONTACT

CN5F(to VF-41 board)

1-562-150-11 o HOUSING, 5P

1-564-026-21 o CONTACT

CN11F(to CN-440 board)

1-563-877-11 o HOUSING, 18P 1-563-869-11 o CONTACT, FEMALE

CN13F(to CN-440 board)

1-563-873-11 o HOUSING, 10P 1-563-869-11 o CONTACT

CN14F(to VR-108 board)

1-563-872-11 o HOUSING, 8P 1-563-869-11 o CONTACT, FEMALE

CN23F(to VR-108 board)

1-562-151-11 o HOUSING, 6P 1-563-088-11 o CONTACT, FEMALE AWG26-30

CN102F(to MICROPHONE)

1-562-151-11 o HOUSING, 6P 1-563-088-11 o CONTACT, FEMALE AWG26-30

PACKING MATERIALS & SUPPLIED ACCESSORIES

Ref. No.

or Q'ty Part No. SP Description

(FOR BVP-70)

A-7401-157-A s PAD ASSY (2) A-7520-253-A o MOUNTED PCB, EX-108 X-3710-001-3 o LID ASSY, UPPER

3-657-705-00 s BOLT(M4X40), HEXAGON HOLE

3-675-930-00 s CAP (50P PIN SIDE), DUST 3-687-116-01 o WASHER(4), STOPPER 3-692-589-01 s TOOL

s COVER, RAIN 3-711-780-01

3-717-823-01 s COVER, BNC

3-720-955-02 s LID, VF MICROPHONE 7-721-140-60 s WRENCH, L (3.0MM)

(FOR BVW-570)

A-7401-157-A s PAD ASSY (2)

A-7520-253-A o MOUNTED PCB, EX-108

X-3710-001-3 o LID ASSY, UPPER 3-675-930-00 s CAP (50P PIN SIDE), DUST 3-692-589-01 s TOOL

3-692-589-01 3-711-780-01

s COVER, RAIN

3-720-955-02 s LID, VF MICROPHONE

s CAP(50P SOCKET SIDE), DUST o BELT, SHOULDER 3-676-269-00

3-698-917-01

o CUSHION 3-711-708-01

s COVER, BNC 3-717-823-01

s CAP, 4P DROP PROTECTION s BAG, PROTECTION 3-718-047-01

4-332-293-00

s SCREW, +B4X5 7-682-559-09